

August 9, 2005

MEMORANDUM

UTAH DEPARTMENT OF TRANSPORTATION

TO: Jim McMinimee, P.E., Chairman

FROM: Barry Axelrod
Recorder, Standards Committee

SUBJECT: Standards Committee Meeting Minutes and Next Meeting

The next meeting has been scheduled for Thursday, August 25, 2005 at 8:00 a.m., in the main 1st floor conference room of the Rampton Complex.

Item		Remarks	Sponsor
1.	Minutes of June 30, 2005	For approval	Barry Axelrod
2.	Environmental Supplement Specifications and Standard Drawings, See Listing	For approval	Terry Johnson
3.	Supplemental Specification 00555M, Prosecution and Progress, Limits of Operation	For approval	John Leonard
4.	ATMS Supplemental Specifications, See Listing	For approval	Robert Strong
5.	Standards Committee Policy 08A5-1 to update FHWA approval process	For discussion	Barry Axelrod
6.	Standard Drawing SL 14, Highway Luminaire Pole Ground Mount and SL 15, Luminaire Slip Base Details	For approval	Scott Jones
7.	Standard Drawing CC 7B, Crash Cushion Type "F" BEAT-SSCC	For approval	Glenn Schulte
8.	Standard Drawing BA 3B, Precast Concrete Constant Slope Transition Section For Crash Cushion And W-Beam Guardrail	For approval	Glenn Schulte
9.	Review of Assignment/Action Log	For review	Jim McMinimee
10.	Meeting Improvements (on-going agenda item)	For discussion	Jim McMinimee
11.	Other Business		

JCM/ba

Attachments

cc:

Cory Pope Director, Region One	Stan Burns Engineering Services	Richard Miller Standards
Randy Park Director, Region Two	Todd Jensen Structures	Barry Axelrod Standards
Tracy Conti Director, Region Three	Darrell Giannonatti Construction	Patti Charles Standards
Dal Hawks Director, Region Four	Tim Biel Materials	Shana Lindsey Research
	Richard Clarke Maintenance	Carlos Machado and Todd Emery FHWA
	Robert Hull Traffic and Safety	Mont Wilson AGC
		Tyler Yorgason ACEC

Agenda Listing

Item 2:

- 01571 Temporary Environmental Controls
- 01574M Environmental Control Supervisor
- EN 1 Temporary Erosion Control (Check Dams)
- EN 2 Temporary Erosion Control (Silt Fence)
- EN 3 Temporary Erosion Control (Slope Drain And Temporary Berm)
- EN 4 Temporary Erosion Control (Drop Inlet Barriers)
- EN 5 Temporary Erosion Control (Pipe Inlet And Curb Inlet Barriers) (New title)
- EN 6 Temporary Erosion Control (Sediment Trap And Stabilized Construction Entrance) (New drawing)
- EN 7 Temporary Erosion Control (Straw Bale Barrier) (New drawing)

Item 4:

- 13551M General ATMS Requirements
- 13552M Ramp Meter Signals and Signing
- 13553M ATMS Conduit
- 13554M Polymer Concrete Junction Box
- 13555M ATMS Cabinet
- 13556M Closed Circuit Television (CCTV) Assembly
- 13557M Variable Message Sign
- 13561M ATMS Power Service
- 13594M Fiber Optic Communication

June 30, 2005

A regular meeting of the Standards Committee convened at 8:00 am, Thursday, June 30, 2005, in the 1st floor conference room of the Rampton Complex.

Members Present:

Jim McMinimee	Project Development	Chairman
Richard Miller	Standards and Specifications	Secretary
Barry Axelrod	Standards and Specifications	Recorder
Randy Park	Region 2	Member
Stan Burns	Engineering Services	Member
Ray Cook for Todd Jensen	Structures	Member
Richard Clarke	Maintenance	Member
Tim Biel	Materials	Member
Todd Emery	FHWA	Advisory Member
Carlos Machado	FHWA	Advisory Member
Mont Wilson	AGC	Advisory Member
Tyler Yorgason	ACEC	Advisory Member

Members Absent:

Robert Hull	Safety	Member
Todd Jensen	Structures	Member
Darrell Giannonatti	Construction	Member

Staff:

Barry Axelrod	Standards and Specifications
Karl Verhaeren	Region 4 Construction
Shana Lindsey	Research
Jeff Saddler	Construction
Robert Strong	TOC
Brent Jensen	Environmental
Larry Montoya	Traffic and Safety

Visitors:

Roland Stanger	FHWA
Aaron Cloward	Transcore (TOC)

Standards Committee Meeting

Minutes of the June 30, 2005 meeting:

1. Minutes of April 28, 2005 meeting were approved as written.

Motion: Randy Park made a motion to accept the minutes as written. Seconded by Tim Biel.

Todd Emery apologized for not having an FHWA representative at the last meeting. He indicated that he brought the approval letter for that meeting with him for this meeting. He said his comments related to the Liquidated Damages item from the April meeting and the approval process in the Standards Committee policy. Referring to the policy he thought there should be something in the FHWA procedure that indicated a formal approval and not just that they would come to the meeting with comments. Barry said he would check and update the policy. He didn't think formal approval was needed by the Standards Committee because this is a clarification of actions already approved. Jim said the Liquidated Damages issue could be covered under Other Business.

Motion: Being no further discussion Jim called the question. Passed unanimously.

2. Supplemental Specifications 01571, Temporary Environmental Controls and 01574M Environmental Control Supervisor and Standard Drawings EN 1, Temporary Erosion Control (Check Dams); EN 2, Temporary Erosion Control (Silt Fence); EN 3, Temporary Erosion Control (Slope Drain And Temporary Berm); EN 4, Temporary Erosion Control (Drop Inlet Barriers); EN 5, Temporary Erosion Control (Pipe Inlet And Curb Inlet Barriers); EN 6 Temporary Erosion Control (Sediment Trap And Stabilized Construction Entrance); EN 7 Temporary Erosion Control (Straw Bale Barrier) (Agenda Item 2) - Presented by Brent Jensen for Terry Johnson who was out sick.

Item covered later during the meeting.

Brent said they are looking for approval of changes to the erosion control standards. He said Terry has done a lot of coordinating with Construction, Maintenance, and the Region Landscape Architects. Brent said Terry is confident that he has addressed the comments he has received. Brent asked if there were any questions on the proposal.

Discussion points were:

- Richard commented on the Maintenance issue related to Check Dams. He said he is bringing this up because of problems with previous standards relating to Check Dams. He went on to explain the problem and that rocks were washed into the culvert, requiring additional work by Maintenance to clean the area and open up the culvert. Richard said he wanted to make sure Terry did the correct calculations to make sure the system was designed correctly.

- Brent said Terry thought inadequate spacing between the Check Dams contributed to the problem. He thought these changes would take care of that problem. The change in the diameter of the rock to a larger rock will help with the problem as well.
- In Section 01571, Article 1.1, Karl suggested changing “diminish” to “diminishing” in paragraph A. On page two of this section Karl commented about the way the drawing series was called out. He suggested listing the call out once at the beginning of the article and eliminate the redundancy in the supporting paragraphs.
- Referring to the same section, Article 2.1, paragraph A, Karl asked if the Engineer had the information described in the subparagraphs. Is there a separate list? Is this part of the approved products list?
- In Article 3.5, Karl asked about the seeding requirements. He thought Contractors might have issues with the two paragraphs. Barry pointed out this part was not a change from the current standard.
- Karl commented about the rock size and the dual-wheel requirement listed in EN 6. He said the rock being put down is the exact size that gets caught between the wheels. He said he knows what we are trying to accomplish but it is a huge mistake to construct anything like this on an entrance to a highway. He said this is aimed at tracking mud onto the highway and dust control. Karl said he doesn’t know if this is a good fix for that. Jim asked Karl if his suggestion is to delete the Stabilized Construction Entrance. Karl said it would be. He said a totally different plan is needed. Brent said he hadn’t anticipated that.
- Randy asked about using a road bed type mix of smaller rock. He added that he hasn’t seen this type of entrance with that size of rock. Karl said it would be a hazard and that he hadn’t seen one either. Brent said this is something he would have to take back to the drawing board.
- Jim commented that Terry was looking for approval, asking Brent if he was rescinding that request. Brent said yes. Brent asked if everything else but that could be approved pending resolution.

Motion: Randy Park made a motion to approve Supplemental Specifications 01571 and 01574 and Standard Drawings EN 1 through EN 5 and EN 7.

- Someone commented that Section 01571 referred to the Stabilized Construction Entrance. Jim said there are specifications that reference the entrance.

Motion: Randy said he would extend the motion to include EN 6 given we change the rock type to an untreated base course and add the 90 foot minimum that Mont referred to earlier.

- Randy asked how the item was paid for. Comment indicated it would be paid as incidental. Mont asked if the 50 foot minimum could be “as required.” Randy commented that he thought Terry could clean up the drawing and get this approved. Brent agreed. Jim said we have a motion and asked that it be restated.

Motion: Randy Park moved that we approve Standard Drawings EN 1 through EN 7 with changes to the rock type on EN 6 to untreated base course and to approve Supplemental Specifications 01571 and 01574 with changes appropriate to the rock type in EN 6. Seconded by Tim Biel.

Discussion points were:

- Jim asked if that included changing the 50-foot requirement on EN 6 to “as required.”
- Ray commented that there were some typos that needed to be corrected. He also asked about the section cut arrows and what was the standard on that. Jim suggested that Ray get with Barry on those.
- Karl commented on note 1 of EN 2 with respect to the “environmentally permitted” phrase. He thought it should just say “where permitted” because of other issues.
- Richard Clark asked about the untreated base course and if that was what was going to be used. Brent said yes and that he didn’t think Terry considered the rock problem. Brent said someone would have to pull all the rocks out from between the tires. He added that in this situation we are better safe than sorry than to rely on that.
- Todd Emery asked about the payment issue and if it had been addressed or is this going to be an actual change order. Mont said the payment issue is addressed if it is well defined to the Contractor in the set of plans and bid items.
- Referring to the Environmental Control Supervisor, Mont asked how that was done. He said sometimes he sees jobs that have an item for it, but most don’t. He asked if we assume all jobs have that position manned by the Contractor. Brent said the Environmental Control Supervisor isn’t required on every job. Mont asked how we distinguish which jobs require the position and which don’t. Brent said it should be in there as a pay item if it applies. Mont commented that if the Contractor says because there is no bid item then the position isn’t needed then that answers his dilemma.

- Discussion continued on the general area of the applicability of an item if there is no bid item. As a Standard all sections are included in a project even when there isn't a bid item. Applicability then has to be determined.

Motion: Following the discussion on pay items Randy withdrew his motion.

Action Item: The Environmental Section to review and update the supplemental specifications and standard drawings based on the meeting discussion.

3. Standard Drawings, GW 5A, 5B, and 5C, Pedestrian Access (Agenda Item 3) – Presented by Larry Montoya.

Item covered later during the meeting.

Larry said this change came out of discussions with the Maintenance Division. He said their request was to remove all vertical curb returns at pedestrian access ramps and to provide a transition section over a two-foot distance. This would prevent snowplows from catching the curb. Larry said the change impacted all three drawings and that they have identified the two-foot distance. He said there is no need to change measurement and payment.

Discussion points were:

- Jim asked if this is actually happening or are we trying to prevent a possible future occurrence. Larry said he didn't know. Rich said he believed it did happen.
- Tyler asked if the two-foot distance mattered if the curb was higher. Larry said it was intended for a six-inch high curb. Mont suggested a 4 to 1 or 6 to 1 fixed distance. Larry said that could be added to the drawings.
- Referring to ADA Accessibility Guidelines for Buildings and Facilities (ADAAG) paragraph 4.7.10 Diagonal Curb Ramps, Richard asked if our drawings met those requirements in relation to the diagonal corner driveways. He said he didn't see that in our drawings and he didn't want UDOT to have to go back and fix installations. He said he was concerned that we are replacing current ramps with an incorrect one. He said he was looking at the parallel directions. Larry said the ADAAG reference applies broadly to pedestrian ramps. Larry said it is specifically directed toward buildings and facilities installation. He said the ADA board has come out with rights of way access guidelines and that is what UDOT and FHWA have adopted. Roland corrected that is what FHWA recommends. Richard said he was okay with the answer and that he just wanted to make sure we didn't have a standard drawing where it is going to change in two years and we have to go back and redo those ramps done in that time frame.

- Larry said blind pedestrians are relying on cues and not on the tiles or surface to give them a sense of direction. They are listening to the cars and audio devices. He said the ramps aren't a directionality thing.
- Jim said he needed to go back to Mont's suggestion on 4 or 6 to 1. He asked Larry what they were going to use and how they were going to indicate that. Larry said in place of the two-foot dimension they could show a slope along the transition.
- Larry asked if the modification could be made with approval.

Motion: Tim Biel made a motion to approve Standard Drawings GW 5A, GW 5B, and GW 5C as discussed and modified for slopes. Seconded by Richard Clarke. Passed unanimously.

4. Supplemental Specification 02745, Asphalt Material (Agenda Item 4) – Presented by Tim Biel for Cameron Petersen.

Tim said this is an update based on the Special Provision. He said the parameters in some of the tables were updated. Tim commented that some of the changes were formatting based on proper terminology.

Discussion points were:

- Jim asked about AGC inputs because none were shown in the submittal sheet. Tim didn't think the changes would impact anyone other than suppliers and that the Pavement Council had discussed the changes.
- Barry pointed out that a lot of the table changes were to correct footnote references. This was formatting only.
- There was no further discussion.

Motion: Randy Park made a motion to approve Supplemental Specification 02745 as presented. Seconded by Tim Biel. Passed unanimously.

5. Supplemental Specification 00725M, Scope of Work (Agenda Item 5) - Presented by Jeff Saddler.

Jeff said they have been working with the AGC for almost a year on the partnering specification. He said a partnering field guide was also developed. Jeff said they are changing the way they do partnering on projects. He said the change reflects what a lot of other states have in their partnering specifications.

Discussion points were:

- Richard asked if the term “partnering concepts” in the change was clear to everyone. Jeff said the concepts will be outlined in the partnering field guide. Jeff said the guide is available from the Construction Web site. He added that they are in the process of developing training for Contractors and subcontractors.
- Randy suggested adding a reference to the guide in the supplemental specification.
- Richard pointed out that the reference to the “Department’s Engineer” should just be to the “Engineer” to standardize the regular specification reference. This applies in several areas throughout the supplemental.
- Karl referring to 1.4 C, suggested replacing “bring in” with “use.”
- Randy referring to 1.4 F 2 asked Mont what the statement meant to him. Mont said the superintendent and the project manager in the case of the Contractor. Randy was wondering if we would get different people depending on the Contractor. Is more definition needed? Jeff said it is outlined in the field guide.
- Randy asked why we don’t just reference the field guide instead of listing the attendees in the specification.
- Mont said it would be helpful to have a specific Web reference to the field guide. Barry said if that is done then the generic Web reference would be added to the supplemental and would link to the Standards References Web page. He went on to explain how that Web page worked. Jeff said the document is just on the Web and not in hard copy in response to a question from Mont. Jeff commented about the Quick Links on the Department Web site. Barry said the link needs to meet their current references guidelines.
- Tyler said he had a comment about paragraphs C and D. He thought the facilitating comments were contradictory with one saying we do it while the other says a third party is needed. There was a little confusion over the meaning of the paragraphs. Jeff said it is an “either or” intent. Karl suggested making D a subparagraph of C. Barry said if that is done he would make C just the first sentence and the rest numbered below to include the rest of C and all of D. Randy suggested just cleaning up the wording.
- Stan asked if we would be required to do partnering on every Contract. Jeff said yes.
- Barry pointed out that with the addition of the partnering field guide in the text of the specification Article 1.2 paragraph B would have to be added to properly reference the guide.

- Karl referring to 1.4 C, asked if the reference to “on all projects” was needed because the specification is a standard. Jim thought it was more definitive if it referred to all projects.
- Jeff asked if he should make the revisions and bring the supplemental to the next meeting. Jim said he was waiting to hear a motion.
- Randy suggested a motion to update the supplemental and bring it back next time. Barry said if that were the case no motion is needed. Randy agreed and withdrew his suggested motion.

Action Item: Jeff Saddler to update the supplemental specification based on the discussion and present it for approval at the August 2005 meeting.

6. Median Barrier Selection Process (Agenda Item 6) – Presented by Tim Biel.

Tim presented the draft of the process. He said the process is to improve consistency between the regions. He said the draft will be reviewed by the regions, central traffic engineers, preconstruction, and design consultants in addition to other stakeholders. He said the options are listed by test levels. Tim said the draft is about as precise as they can get and still give the regions some flexibility. Tim said after coordination if the draft is acceptable to the project managers he will turn the document into a policy and bring it back to the Standards Committee.

Discussion points were:

- Jim said he was at an AASHTO Subcommittee on Design meeting earlier in the week where he saw a video clip on documentation for precast constant slope barrier with a section that meets 350 testing. Jim said he thought it was a level 4 test. Tim said he thought Glenn Schulte was waiting for some testing results. .
- Randy said he knows a lot of work goes into this and he wanted to know who makes the final approval. Tim said they struggled with the approval level decision. He wondered if it would go to the Standards group, the Standards Committee, or Traffic and Safety. Tim said he was open to suggestions as to the approval level. Randy said from a region standpoint it should be somebody in the region, particularly the region preconstruction engineer. Randy said he liked the concept. Richard asked Randy if he thought the Standards Committee should approve the process. Randy said he didn’t think it was inappropriate, but didn’t think it needed to be. Tim said it effects the application of standards the Standards Committee has approved so based on that he thought the Committee should have some sort of approval stamp.

- Jim asked FHWA for their opinion on where the approval should be. Comments indicated that at least Traffic and Safety should be consulted. Jim said he wasn't referring to the process but to a particular selection of barrier. Comment indicated the complex should be consulted with the region giving the approval. Randy said if the process is followed then we should have consistency.
- Jim said this was an issue that was covered at the AASHTO meeting and the decision was to stay with the Roadside Design Guide. Where barrier is optional the subcommittee strongly suggested looking at project specifics and accident rates.
- There was no further discussion. The item will be finalized and brought back.

7. New Products Procedure Update (Agenda Item 7) – Presented by Shana Lindsey for Michelle Page.

Shana said the QIT tasked to look at this issue came up with four recommendations. She listed the recommendations. The first was that the R-52, new product submittal form, would be updated to include a Life Cycle Cost Analysis section. The second was to develop a means for sharing the new product evaluation panel decisions with affected areas. To do this a Web page was created as well as an e-mail to those impacted by the decision. The third recommendation was to add a Research contact number to the product listings. The last recommendation was to update the Policy and Procedure for 08F-2 and 08F-3 to include latest job titles/descriptions and included the communication of panel decisions in the body of the Policy and Procedure.

Discussion points were:

- Stan asked if the individuals first bringing this issue to the Standards Committee were satisfied that product decisions wouldn't be made by this Committee. Shana explained that members from each area meet monthly to approve the products. In response to comments Shana said Dave Miles didn't attend any of the QIT meetings.
- Shana asked the Committee for approval. Jim said the item was for discussion.
- Shana asked about the policies. Barry explained that the Standards Committee doesn't have to approve these policies. Jim as the Project Development Group leader can approve them based on the recommendation of the owner.
- Jim thanked Shana for her and Research's work on this item. There was no further discussion.

8. Supplemental Specification 00555M, Prosecution and Progress, Limits of Operation (Agenda Item 8) – Item to be presented by John Leonard.

No one was in attendance to present the item. Jim deferred the item until the next meeting.

9. Supplemental Specifications 13551M, General ATMS Requirements; 13552M, Ramp Meter Signals and Signing; 13553M, ATMS Conduit; 13554M, Polymer Concrete Junction Box; 13555M, ATMS Cabinet; 13556M, Closed Circuit Television (CCTV) Assembly; 13557M, Variable Message Sign; 13561M, ATMS Power Service; 13594M, Fiber Optic Communication (Agenda Item 9) – Presented by Robert Strong.

Robert said in order to update and refine their ATMS specifications they contracted Transcor to take nine specific ATMS devices and review the specifications. The submitted supplemental specifications cover the recommended changes.

Starting with Section 13551, Robert said the references were updated to include the AASHTO Roadside Design Guide that they now adhere to. He said as a result of now using this guide it has changed some of the concepts in the way they install devices. He said they also excluded outdated references. New references were added. Robert said Federal Highway Administration Guidelines were also added. He said it provides comprehensive guidelines for testing, evaluating, and inspecting devices. Changes to the remaining areas of the section are related to the reference changes.

Discussion points were:

- Referring to Section 13551, page 2 Jim asked about the submittals. He asked what we do with all the submittals. Robert said they currently file the information at the TOC. Aaron Cloward, Transcor, said after review the documentation is put in the project archives. Jim asked if the TOC maintained the devices and went back to look at the as-builts. Robert said they did, using a current example of a project update where they reviewed the as-builts.
- Aaron said that a lot of the changes are related to the last change to the Standard Drawings they made. He added that some of the changes were related to changes made as the result of the use of special provisions removing outdated practices.
- Ray Cook commented about the use of the various references that might be more related to design guidelines compared to construction guidelines.
- Ray also commented about using ASTM references instead of AASHTO references. Robert said they used the ASTM F 1554 reference because of its use in the FHWA Guidelines. Commenting on Ray's comments Jim said that would provide consistency with our other specifications on how we reference information. Ray agreed, adding that he thought years ago FHWA indicated the use of AASHTO references.

- Ray said a lot of times the ASTM and AASHTO references are very similar. Jim asked if someone in Structures could show the TOC people how the various references are used. Aaron said they have used the ASTM references from the beginning but could update the specifications for the references. Robert said they would look at the specifications from that standpoint.

Robert continued with the review of Section 13552. He said the concrete class was updated to use AA(AE) concrete. He said there were no other significant changes to the section.

Section 13553 was covered next. Robert said that Transcor wanted to clarify the 5 foot maximum distance on the marking tape so the location was clear. The rest of the changes were related to changes to the drawings or made as the result of comments from Contractors on projects. He said this related to the reuse of conduit. He went on to explain the problem. Conduit can't be taken out of the ground, repainted, and then put back. He said that was not the message they were trying to get across. Robert said in the ground existing cells can be reused but you don't take them out and then reuse.

Robert then covered Section 13554. He said there were no significant changes. He said they would look at the section for use of common guidelines.

Section 13555 was covered next. Aaron said the changes were mostly clarifications. He said changes were also made to help the Maintenance people related to safety issues with power. Robert discussed the hazard and the corrective actions.

Discussion points were:

- Jim asked to go back to Section 13554 with respect to page 3, paragraph O. He said he didn't see any reference on how the GPS records are given to the Engineer. Robert agreed that a reference was needed.

Robert moved on to Section 13556. He said they found an error that needed to be corrected in the references and that they will review the section for proper use of references. Referring to the recommended change on page 3 of 3, Robert said the torque requirement is not realistic and would correct it. He explained the proper method.

Discussion points were:

- Todd Emery commented about the use of the FHWA reference. Robert said he would look at it to make sure the document is referenced properly.
- Todd referring to Article 2.6, he asked why are we going away from a spec based suppressor and going to a state furnished one. Aaron said that unit is part of the standard camera and is the only unit that will work with the camera.

Section 13557 was covered next. Robert said old references were removed and new ones added. He pointed out that one of the additions needed to be corrected for the proper reference. He said they would review the references to meet AASHTO requirements.

Robert covered Section 13561 next. He said this change dealt with wire usage. He indicated that the wording of paragraph K needed to be corrected. The initial change dealt with wire for outdoor use versus indoor use with the correction dealing with the use of stranded wire.

Robert moved on to the last section being changed, Section 13594. He said the change is based on changes to standards for fiber optics. He said the new LC standard was added but the old ST standard was left to cover the existing devices. He said the remaining items were updated to meet the new fiber standards.

He asked if there were any questions relating to all the recommended changes.

Discussion points were:

- Tyler commented about the general formatting of some of the items and the use of verbs in lists of items. He said if you are telling the Contractor what to do you need to use a verb. Referring to Section 13594, Article 2.4, Barry said the format was fine, with the word “provide” used in paragraph A applying to each of the items below it. Barry said there is no need to list “provide” in each of the ten subparagraphs.
- Referring to Section 13551, Karl pointed out the spelling of “luminaries.” He said the same applies in some of the other sections. In the same section, Article 2.1, Karl commented about the number of copies being provided. He said one requirement was for two copies of all documentation and one for one copy of selected documents. This needs to be consistent. Robert said he would look at it.
- Referring to Section 13553, Article 3.2 A, Karl pointed out the item refers to “saw cut” while the referenced section is titled Pavement Cutting. Karl said he was questioning the requirement and if it is shown properly. In the same paragraph Karl also commented about the T-patch and whether this was a familiar term. Robert said the term T-patch has been used before and is in the Standard Drawings. Robert said he would look at it.
- Referring to Section 13561, Article 3.2 A, Karl said he wasn’t sure what “make timely and appropriate arrangements” meant. He said something more specific should be used. Robert asked if a time frame would work. Karl said it would.
- Referring to Section 13552, Article 3.2 E, Tyler said the statement needs to direct the Contractor to do something, for example “Construct caissons conforming to AASHTO ...” Ray pointed out that the reference may not be complete.

- Referring to Section 13556, Ray said the references need to be looked at, specifically the one in paragraph E. He said that document doesn't exist. Ray thought they meant what was listed in paragraph F. He said the reference in G wasn't correct, thinking it should be the same as F.
- Aaron said they would get with the Structures area to work out the details.

In response to Jim's comment about the items being here for approval, Robert indicated they had found other changes that needed to be made and that the supplemental specifications weren't ready for approval. Robert said he thought it best to just present the supplemental specifications today to get comments and then go back and update the sections.

Action Item: Robert Strong to take the supplemental specifications back for review, correction, and update.

10. Supplemental Specifications 03412M, Prestressed Concrete and 05120M, Structural Steel (Agenda Item 10) - Presented by Ray Cook.

Ray said the Structures Division was asked to modify their specifications to require an erection plan for girders to limit the Department's liability during erection and to provide additional safety to the traveling public. He said this comes out of an incident that occurred in Denver about a year ago where an inadequately supported girder collapsed. He said the goal is to make sure that doesn't happen here.

Ray said the Contractor would prepare an erection plan that would be signed and sealed by a Utah Professional Engineer and submitted to the Department to confirm that the requirement has been met, not necessarily for approval. He said the requirements were taken from a number of locations to come up with these supplemental specifications.

Discussion points were:

- Todd Emery commented about the statement about the Engineer not approving the plan. He said the statement was in the Structural Steel supplemental specification but not in the Prestressed Concrete one. Ray said they could add that to Section 03412.
- Referring to Section 05120 and the requirement for supporting calculations, Todd asked if the same requirement was needed in Section 03412 for Concrete. Ray said he didn't include it in the prestressed concrete specification because those are single girders where the ones in the Structural Steel specification are spliced together. Ray said he didn't think it was necessary in 03412.

- Ray said on their more complicated bridges where they want to review and approve the erection plan they will add a special provision. Stan asked if there are any criteria spelled out so there is some consistency to use on the case by case basis of approving the plan. Ray said that is something they will have to develop.
- Jim said he was interested in the cost section of the submittal sheet. He said it refers to an increased bid cost but then submittal sheet goes on to state this is something that should already be done. Jim said in fact we may not see the additional cost. Ray agreed. Ray went on to explain the different possibilities, referring to the comment section of the submittal sheet.
- Karl commented about the wording in Section 03412, Article 3.7 with respect to protection in terms of both materials and people. He said what is shown is fine but proposed stating “protection of prestressed concrete members, and the safety of all workers, inspectors, and the public” or something like that. In Section 05120, Article 3.5 A, Karl said the reference should be to structural steel, not prestressed concrete.
- Someone asked about the use of PCI certification. Ray said with this being so new he didn’t know but currently we don’t require PCI certification for fabricators. He said this is something they can look at.
- There was no further discussion.

Motion: Randy Park made a motion to approve Supplemental Specifications 03412M and 05120M as discussed and modified as presented. Seconded by Tim Biel. Passed unanimously.

11. Review of Assignment/Action Log (Agenda Item 10)

Jim reviewed the action log.

Comments beyond those identified in the agenda package, Action Item Update follow:

- Item 1, Rumble Strips. Jim deferred discussion and closing of this item until someone from Traffic and Safety could be present to discuss the status.
- Item 2, Painted Cattle Guard. Jim deferred discussion and closing of this item until someone from Traffic and Safety could be present to discuss the status.
- Item 3, New Drawing of Four-Legged Intersection. Jim deferred discussion and closing of this item until someone from Traffic and Safety could be present to discuss the status.
- Item 4, Traffic Barriers. This item was discussed under agenda item 6. The item should be finalized by the August 2005 meeting.

- Item 5, New Products Procedure. This item was discussed under agenda item 7. No vote was necessary. The discussion and resolution of this item is complete. Closed.
- Item 6, Open Range Cattle. Jim deferred discussion and closing of this item until someone from Traffic and Safety could be present to discuss the status.
- Item 7, Section 00555, Prosecution and Progress, Liquidated Damages Table letter to FHWA indicating the information has been reviewed but that no change is being recommended. As of the June 30, 2005 meeting FHWA indicated they had not received the required letter. There was no one from Construction present to discuss the letter. Barry said the last time he talked to Pete the letter hadn't been done so the item was entered on the action log. Todd Emery said that Pete discussed leaving the table as is. Todd said that was fine. He suggested that Pete put in the letter that the values are adequate to cover the minimum CE cost. Todd said the regulation just doesn't require a review every two years but also that the liquidated damages cover at a minimum the CE costs. That fact needs to be in the letter.
- Barry asked if Jim wanted to address closing the Traffic and Safety items until they had something to present. Jim said he would have been comfortable doing that if someone had been present from Traffic and Safety. Seeing how they weren't Jim said to leave the items open on the action log. The above numbered items reflect this.
- Richard asked if someone else could proceed in moving forward with these items. Jim said that is a possibility. Richard said some of the items are three years old and must have been important at one time to get on the log, but don't seem to have importance today. Jim said if Bob is here next time we can make that offer.
- The status report as handed out at the meeting follows:

Action Item Update for April 28, 2005 Standards Committee Meeting

(As of June 9, 2005)

Item 1, Rumble Strips: According to John Leonard the BYU study is still pending. No date set. This item was originally opened June 27, 2002. **Recommend closing item and reopen when the item is ready to finalize.**

Item 2, Painted Cattle Guard: According to John Leonard this is on hold pending further study and review within the Research Division. This item was originally opened December 19, 2003. **Recommend closing item and reopen when the item is ready to finalize.**

Item 3, New Drawing of Four-Legged Intersection: John Leonard indicated all related intersection drawings are being reviewed and will be update in the Fall time frame. This item was originally opened August 28, 2003. **Recommend closing item and reopen when the item is ready to finalize.**

Item 4, Traffic Barriers (Median Barrier Selection Process): This item is being covered on the June agenda.

Item 5 QIT to review entire New Products procedure: Information on this item has been finalized with a policy and Web page update. This item is being covered on the June agenda.

Item 6, Open Range Cattle Issues: Robert Hull not available for the June 2005 meeting. Target date moved to August 2005 meeting.

Item 7, Section 00555, Prosecution and Progress, Liquidated Damages Table letter to FHWA indicating the information has been reviewed but that no change is being recommended: According to Pete Negus the letter was still pending as of June 6, 2005.

12. Meeting Improvements (on-going agenda item) (Agenda Item 12).

None

13. Other Business:

Standards Committee Policy: Todd Emery pointed out the need to update the policy to cover their approval procedures. Barry said he would update the policy and asked Jim if it should be put on the next agenda. Jim said to put it on as an informational item in case anyone had any comments.

Deviating from Standards: Richard Miller presented this item referring to his assignment that he briefly covered at the last meeting. He handed out a summary sheet of recommendations. He explained how the situation came up, referring to the use of traffic control barrels instead of barrier as referenced in the standards. He mentioned other examples such as using a six-inch strip instead of a four-inch one and using black paint with the white paint in striping. Richard said as this item was reviewed four actions were recommended. He said Barry did a survey with Construction, Project Managers, and Preconstruction. The first recommended action is to update Department Policies and Procedures. Deviations in that area are most likely because policies are outdated. Secondly the regions thought they needed the authority to approve special provisions instead of having them come to a central group for approval. The issue of using the Design Exception Process was brought up by the regions. Richard said he wanted input from the Standards Committee.

Jim asked if that meant if a drawing that wasn't a standard was used then it would have to go through the Design Exception Process to get approval for use. Randy said that is a bigger issue than specifications. He said a lot of things are detailed in drawings. Richard said the details usually fall within AASHTO standards.

Jim said then if someone wrote a special provision they would have to go through some kind of process including the reason why they want to use this special provision and get someone to buy off on it. Richard said that process already exists in the regions because there is a review at the construction level, preconstruction level, and project management level. Richard said they were thinking about providing a set of guidelines to follow when writing a special provision.

Randy said the Design Exception Process is designed for the 12 critical elements. Randy commented that the discussion is to expand that process to include everything. Richard presented a scenario. Jim said if that process had occurred in the lawsuit on the use of barrels instead of barrier then we wouldn't be in the lawsuit.

Jim commented that there are items that we would want to go through the process like Traffic Control and safety items. Are there items we don't care about? He said he isn't sure he could find a lot of passion to argue about a lot of the special provisions we write. Jim asked if it is a "one size fits all" or are there categories of special provisions. He asked if that made sense. Richard Clarke asked about the direction we are going and if we are exceeding the standard and if that is the same thing as not meeting the standard. Jim commented that that was a good question.

Jim proposed that we ask Richard Miller to pursue this as if it is a policy and to go through the same process that the submittal sheet talks about as if it were any other assignment and have him contact various groups and see if we can get a consensus. Jim said this has implications on how we do business.

Karl commented on the differences between Region 4 and Region 1 for example in the need for different special provisions. He also commented about the use of the special provisions Web area. Jim said it looked like Karl was volunteering for Richard's QIT.

Tyler said there is some confusion within the consulting community. He commented about a consultant having a need to change or modify a standard with a special provision but it doesn't fall into one of the 12 critical elements. He asked if there is any kind of process to do that. Tyler said there are a lot of different expectations that vary from project manager to project manager. He said it is hard to know how to address this.

Action Item: Richard Miller to form QIT to put together a policy to handle deviating from standards.

Median Cable Barrier: Jim said this came out of the Subcommittee on Design and he has given Richard Miller an assignment to look into this. Jim said one of the discussion items was median cable barrier and adjustments to standards they would suggest. Jim said it was specific as to whether or not the barrier needs to be located outside of an area within the middle of the ditch.

Action Item: Richard Miller to investigate the need for an off set in the installation of median cable barrier.

Adjourned.

The next regular meeting of the Standards Committee has been scheduled for Thursday, August 25, 2005, at 8:00 a.m., in the 1st floor conference room of the Rampton Complex.

Approval of Minutes: The foregoing minutes were approved at a meeting of the Standards Committee held _____, 2005.

Assignment/Action Item Log

Date Initiated/Updated	Item #	Action	Assignments	Status	Target Date
June 27, 2002 October 31, 2002 December 19, 2002 February 27, 2003 April 24, 2003 June 26, 2003 August 28, 2003 October 30, 2003 December 18, 2003 February 26, 2004 April 29, 2004 June 24, 2004 August 26, 2004 October 21, 2004 February 24, 2005 April 28, 2005 June 30, 2005	1	Standard Drawing PV 8 (Rumble Strip) - Process being reviewed. Research looking into testing. - A policy is to be developed over the next several months. - No change - No further updates. Target date changed. - Progress continuing. To work with Research. - Process continuing. - Still being worked. - No update - Jim to follow up with Research. - Research has study with University of Utah - Research study complete. Policy being written. - Waiting for BYU study results. - Still being reviewed. Target changed. - No change - No one present to discuss.	Darrell to assign someone from Construction. Richard Miller from Maintenance. Fred Doehring. Betty Purdie. Robert Hull to head the group. Robert Hull Stan Burns Robert Hull Stan Burns	Open	August 2005 meeting

Date Initiated/Updated	Item #	Action	Assignments	Status	Target Date
December 19, 2003	2	- Painted Cattle Guard: With assistance from Research Division, Traffic and Safety to make recommendation.	Glenn Schulte John Leonard	Open	August 2005 meeting
February 27, 2003		- No status.			
April 24, 2003		- Traffic Engineering Panel to review			
June 26, 2003		- No change. Not due until August.			
August 28, 2003		- No change.			
October 30, 2003		- Traffic and Safety and Research to work together to determine history and usage requirements.	Bob Hull Stan Burns		
December 18, 2003		- No change in target date.			
February 26, 2004		- Not on agenda.			
April 29, 2004		- Still gathering information			
June 24, 2004		- No report. E-mail sent to SAF and RES.			
August 26, 2004		- Cattle Guard – Put team together to look into information related to cattle guard type and make a recommendation to include a usage policy and related standard specifications and drawings.	John Leonard		
October 21, 2004		- No change.			
February 24, 2005		- No change. Work priorities prevented further review.			
April 28, 2005		- No change			
June 30, 2005		- No one present to discuss.			

Date Initiated/Updated	Item #	Action	Assignments	Status	Target Date
August 28, 2003	3	A new drawing depicting the four-legged intersection to be developed.	John Leonard	Open	August 2005 meeting
October 30, 2003		No change in status.			
December 18, 2003		Target date set.			
February 26, 2004		No change.			
April 29, 2004		Being developed			
June 24, 2004		No report. Not due until August. E-mail sent to SAF and RES.			
August 26, 2004		No change except target date.			
October 21, 2004		Still under development. Target date moved.			
February 24, 2005		No change. Work priorities prevented further review.			
April 28, 2005		No change			
June 30, 2005		No one present to discuss.			

Date Initiated/Updated	Item #	Action	Assignments	Status	Target Date
April 29, 2004	4	Traffic Barriers: Task group to gather information and make a recommendation for a barrier type.	Jason Davis	Open	August 2005 meeting
June 24, 2004		Review still in progress.	Tim Biel		
August 26, 2004		No change			
October 21, 2004		No change			
February 24, 2005		No change. Work priorities prevented further review. Cable barrier complicating issue.			
April 28, 2005		No change. Still compiling data.			
June 30, 2005		Finalize information			
February 24, 2005	5	Open Range Cattle Issues: Develop relevant information and guidelines.	Robert Hull	Open	August 2005 meeting
April 28, 2005		No change			
June 30, 2005		No one present to discuss.			
April 28, 2005	6	For Section 00555, Prosecution and Progress, Liquidated Damages Table write letter to FHWA indicating the information has been reviewed but that no change is being recommended.	Pete Negus	Open	As soon as possible.
June 30, 2005		No current status. FHWA has not received the letter.			

Date Initiated/Updated	Item #	Action	Assignments	Status	Target Date
June 30, 2005	7	Environmental Supplemental Specifications and Standard Drawings: Environmental Section to review and update the supplemental specifications and standard drawings based on the meeting discussion.	Brent Jensen Terry Johnson	Open	August 2005 meeting
June 30, 2005	8	Supplemental Specification 00725M, Scope of Work: Update the supplemental specification based on the discussion.	Jeff Saddler	Open	August 2005 meeting
June 30, 2005	9	ATMS Supplemental Specifications: Review, correction, and update supplemental specifications as discussed in the meeting.	Robert Strong	Open	August 2005 meeting
June 30, 2005	10	Deviating from Standards: Form QIT to put together a policy to handle deviating from standards.	Richard Miller	Open	None
June 30, 2005	11	Median Cable Barrier: Investigate the need for an off set in the installation of median cable barrier.	Richard Miller	Open	None

Closed Items From Last Meeting (June 30, 2005)					
Date Initiated/Updated	Prior Item #	Action	Assignments	Status	Target Date
August 26, 2004	5	Form a QIT with Jim McMinimee and Dave Miles to review the entire New Products procedure.	Stan Burns	Closed	Closed
October 21, 2004		Still being worked.			
February 24, 2005		Meeting have been schedules	Shana Lindsey Michelle Page		
April 28, 2005		No change			
June 30, 2005		The discussion and resolution of this item is complete.			

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Standards Committee Agenda Items Section

Submittal Sheets, Supplemental Specification Drafts, Standard Drawing Drafts, and other supporting data for the August 25, 2005 Standards Committee meeting follows.

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Standards Committee Submittal Sheet

Name of preparer: Terry Johnson

Title/Position of preparer: Senior Landscape Architect

Specification/Drawing/Item Title: EN Standard Drawings, Temporary Environmental Controls, Environmental Control Supervisor

Specification/Drawing Number: Std. Dwg. EN1-7, Std. Spec. 01571 & 01574

Enter appropriate priority level:

(See last page for explanation)

3

Sheet not required on editorial or minor changes to standards. Check with Standards Section.

NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page. (<http://www.udot.utah.gov/index.php/m=c/tid=303>)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.
1. We have received comments on the current standards from Construction and Maintenance requesting changes.
 2. Some of the Best Management Practices (BMP) are out-dated and need to be eliminated and replaced with more state-of-the-art practices.
- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.
1. Temporary Environmental Controls Spec: Old BMP's that are no longer used will need to be eliminated from the list and new ones will need to be added to the list.
 2. ECS Spec: No changes.

C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site, Members page at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)

No initial comments were received. Have considered AGC comments discussed at last Standards Meeting.

ACEC Comments: (Use as much space as necessary.)

No comments were received.

D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

Note: There is a two-week response time set for this item. Allow Stakeholders two weeks to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

Region Landscape Architects

All of the region landscape architects have reviewed and commented on the Standard Drawings and the Specifications. We have met and discussed the comments. The Drawings and Specifications as they now exist reflect our resolution. The region landscape architects are on construction projects and receive input from construction personnel regarding necessary improvements to Standards.

Construction Engineers

A committee consisting of Construction and Maintenance personnel reviewed the Standard Drawings. Their comments have been incorporated.

Talked with Karl about some of his concerns at the last Standards Meeting.

Contractors (Any additional contacts beyond “C” above.)

We have an annual meeting with contractors who do erosion control on UDOT projects. Some of their comments have been included in these changes. We also conduct ECS classes every year in contractors attend and comment on items of concern.

Suppliers

Included in the same meeting noted above, suppliers are also invited to discuss new products to be considered. Some changes have been made to incorporate better products.

Consultants (as required) (Any additional contacts beyond “C” above.)

Others (as appropriate)

- E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

No additional testing required.

- F. Costs? (Estimates are acceptable.)

1. Additional costs to average bid item price.

No additional costs are anticipated, if anything, there should be a cost reduction. -

- Replacement BMP's cost less than old ones.
- Giving the contractor material options.
- Simplified installation procedures.
- Provided charts to better estimate amount of material required.

2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).

NA

3. Life cycle cost.

NA

- G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.) (Estimates are acceptable.)

Update out of date practices with more state of the art practices.

H. Safety Impacts?

NA

I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

Other state DOT's are using the new items incorporated and they seem to be working fine.

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

- | | |
|------------|---|
| Priority 1 | Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised. |
| Priority 2 | Upon posting, this impacts projects being advertised. |
| Priority 3 | Upon posting, the approved standard takes effect four weeks later for projects being advertised. |

**Supplemental Specification
2005 Standard Specification Book**

SECTION 01571

TEMPORARY ENVIRONMENTAL CONTROLS

Delete Section 01571 and replace with the following:

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Requirements for controlling erosion on the construction site and diminishing the amount of sediment leaving the site, and related areas under the Contractor's control.
- B. Requirements for installing, maintaining, and removing temporary erosion control measures.

1.2 RELATED SECTIONS

- A. Section 01574: Environmental Control Supervisor
- B. Section 02373: Riprap
- C. Section 02610: Pipe Culverts
- D. Section 02613: Culvert End Sections
- E. Section 02922: Seed, Turf Seed, and Turf Sod

1.3 REFERENCES

- A. AASHTO M 288: Geotextile Specifications for Highway Applications.
- B. Storm Water Pollution Prevention Plan (SWPPP)

1.4 TYPES

Refer to EN series Standard Drawings for all types.

- A. Check Dam:
 - 1. A temporary fiber roll or stone structure that is placed across a ditch to intercept and pond sediment-laden runoff, thereby reducing the water velocity and allowing suspended sediment to settle. Constructed so water will flow over a low point in the middle of the dam and not around the sides.
- B. Silt Fence:
 - 1. A geotextile fabric fence installed to intercept and pond sediment-laden sheet flow runoff allowing suspended sediment to settle.
- C. Slope Drain:
 - 1. A polyethylene pipe placed on a slope that collects and transports storm runoff down the face of a slope and is used until permanent drainage facilities are installed or vegetation growth is adequate.
- D. Temporary Berm:
 - 1. A ridge of compacted soil, with or without a shallow ditch that diverts storm runoff from a recently constructed slope to a controlled release point.
- E. Drop-inlet Barrier:
 - 1. A fiber roll, silt fence, or stone barrier placed around a drop-inlet that intercepts and ponds sediment-laden runoff allowing suspended sediment to settle. If the pond height reaches the top of the barrier, water flows over the barrier and into the drop-inlet.
- F. Pipe Inlet Barrier:
 - 1. Consists of a horseshoe-shaped barrier protecting a pipe inlet that intercepts and ponds sediment-laden runoff before it enters a pipe allowing suspended sediment to settle.
- G. Curb Inlet Barrier:
 - 1. A protective barrier placed across a curb inlet that intercepts and ponds sediment-laden runoff before it enters a curb inlet.
- H. Sediment Trap:
 - 1. An excavated basin, usually installed at low points on a construction site, that intercepts and ponds sediment-laden concentrated flows allowing suspended sediment to settle.

- I. Stabilized Construction Entrance:
 - 1. A layer of rock placed at a construction site entrance that removes mud from vehicle tires before they leave the construction site and drive onto a paved road.
- J. Straw Bale Barrier:
 - 1. Consists of straw bales butted end to end and used in active construction areas where a silt fence would fail. Installed to intercept and pond sediment-laden sheet flow runoff allowing suspended sediment to settle.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Check dams:
 - 1. Fiber Roll:
 - a. Fiber Roll: Contact Engineer for Approved List of Fiber Roll Products. Approved list is updated annually.
 - b. Wood stakes: commercial quality lumber 2-inch square (nominal) by 3 feet.
 - c. Channel Liner: Contact Engineer for Approved List of Channel Liners. Approved list is updated annually.
 - 2. Stone: Well-graded within 2 inches to 6 inches in diameter.
- B. Silt Fence:
 - 1. Silt Fence Fabric: See AASHTO M 288 (Table 6 – Temporary Silt Fence Property Requirements).
 - 2. Wood Post: commercial quality lumber, 2-inch square (nominal) by 4 feet in length.
 - 3. Fasteners: Staples, wire, zip ties, or nails sufficient to maintain the fabric's attachment to post.
- C. Slope Drain:
 - 1. Pipe Culverts: Refer to Section 02610.
 - 2. End Section: Refer to Section 02613.
 - 3. 9 inch Loose Riprap: Refer to Section 02373.
 - 4. Wooden stakes: commercial quality lumber 2-inch square (nominal) by 3 feet.
- D. Temporary Berm:
 - 1. Existing Soil.

- E. Drop-Inlet Barriers:
 - 1. Fiber Roll: Refer to this Section.
 - 2. Stone: Well-graded within 2 inches to 6 inches diameter.
 - 3. Silt-Fence: Refer to this Section.
 - a. Wood stud: 2 inches x 4 inches (nominal).
- F. Pipe-Inlet Barrier:
 - 1. Stone: Well-graded within 2 inches to 6 inches in diameter.
- G. Curb Inlet Barrier:
 - 1. Concrete Building Blocks.
 - 2. Stone: Well-graded within 2 inches to 6 inches diameter
 - 3. Wire Mesh: 0.5 inch by 0.5 inch openings.
 - 4. Wood stud: 2 inches x 4 inches (nominal).
- H. Sediment Trap:
 - 1. 9 inches Loose Riprap: Refer to Section 02373.
- I. Stabilized Construction Entrance:
 - 1. Stone: Well-graded within 2 to 3 inches in diameter.
- J. Straw Bale Barrier:
 - 1. Standard Straw Bales: Obtained from weed free fields that have been certified by the Utah Department of Agriculture.

PART 3 EXECUTION

3.1 PREPARATION

- A. Follow the Storm Water Pollution Prevention Plan (SWPPP) in the plan set.
 - 1. Address in the SWPPP all disturbed areas on a project including staging areas, haul roads, borrow sites, stockpiles, and disposal areas.
 - 2. If SWPPP is not provided in the plans, create and submit a plan to the Engineer for approval.
 - 3. Obtain written approval from the Engineer to change the SWPPP.
- B. Designate an Environmental Control Supervisor (ECS) who will:
 - 1. Work directly with the Department SWPPP coordinator designated by the Engineer.
 - 2. Be available as needed to coordinate the SWPPP, inspect and maintain sediment control devices, and resolve other issues.

- C. Do not start earth-disturbing work until SWPPP is approved, and appropriate temporary erosion and sediment control measures are in place.
- D. Use the most restrictive requirement if a conflict occurs between erosion and sediment control specifications and federal, state, or local agency's laws, rules, or regulations.

3.2 INSTALLATION

- A. Provide or construct measures such as check dams, silt fence, slope drains, drop-in inlet barriers, sediment traps, and other erosion control devices or methods to reduce erosion and sedimentation during construction and/or shutdown periods.
- B. Follow installation procedures outlined in the EN Series Standard Drawings.

3.3 INSPECTIONS

- A. Inspect all denuded areas during construction to determine potential erosion problems. Pro-actively apply corrective measures in a timely manner as required.
- B. Inspect all sediment retention structures. Refer to Section 01574.

3.4 MAINTENANCE

- A. Maintain temporary sediment control devices to ensure they function properly until all disturbed areas draining to them are stabilized.
- B. Remove and properly dispose of sediment when it has accumulated half way up the overall structure height or it interferes with the performance of the structure.
- C. Dispose of sediment removed from erosion control structures in a manner acceptable to the Engineer.

3.5 REMOVAL

- A. After all seeding and mulching has been placed and just before final closeout of the project, remove any remaining sediment from behind and around erosion control features and remove all temporary erosion control features unless directed differently by the Engineer.
- B. Seed areas where the sediment was removed following Section 02922.

END OF SECTION

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**Supplemental Specification
2005 Standard Specification Book**

SECTION 01574M

ENVIRONMENTAL CONTROL SUPERVISOR

Delete Article 1.1, paragraph A and replace with the following:

- A. Description of the responsibilities of the Contractor's Environmental Control Supervisor (ECS) **to administer environmental compliance on the project.**

Add Article 1.3, paragraph B:

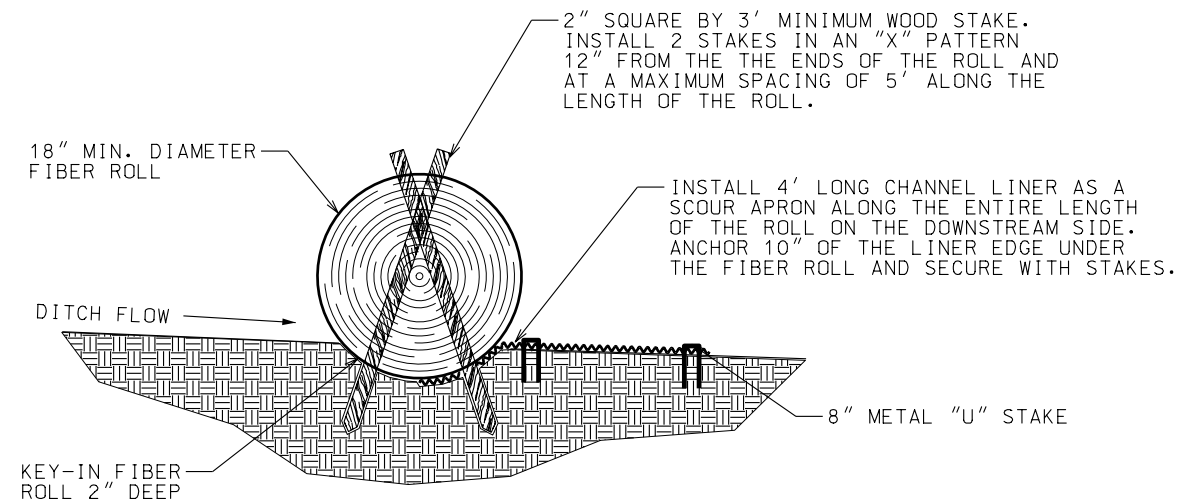
- B. **Utah Storm Water General Permit for Construction Activities**

Add Article 3.1, paragraphs F and G

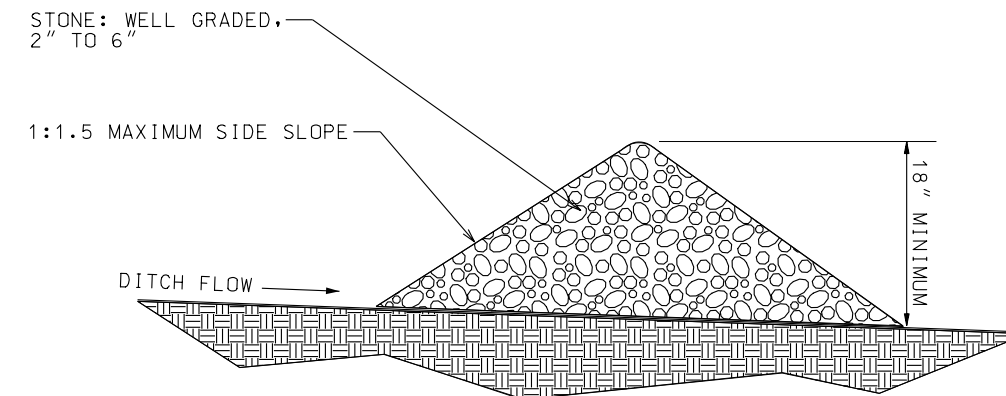
- F. **Know what is contained in Utah Storm Water General Permit for Construction Activities – Permit No.: UTR100000 and comply with the outlined conditions. Refer to <http://www.udot.utah.gov/index.php/m=c/tid=719>.**
- G. **When a U.S. Army Corps of Engineers Nationwide and Individual Permits or a Utah Division of Water Rights Regional General Permit 40 is issued on a project, know and follow the General and Special Conditions associated with these permits.**

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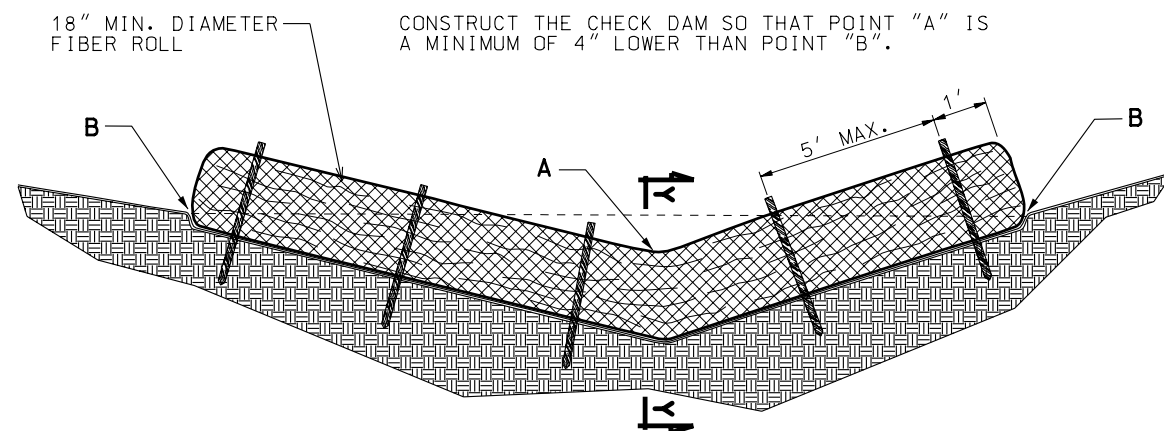
CHECK DAMS



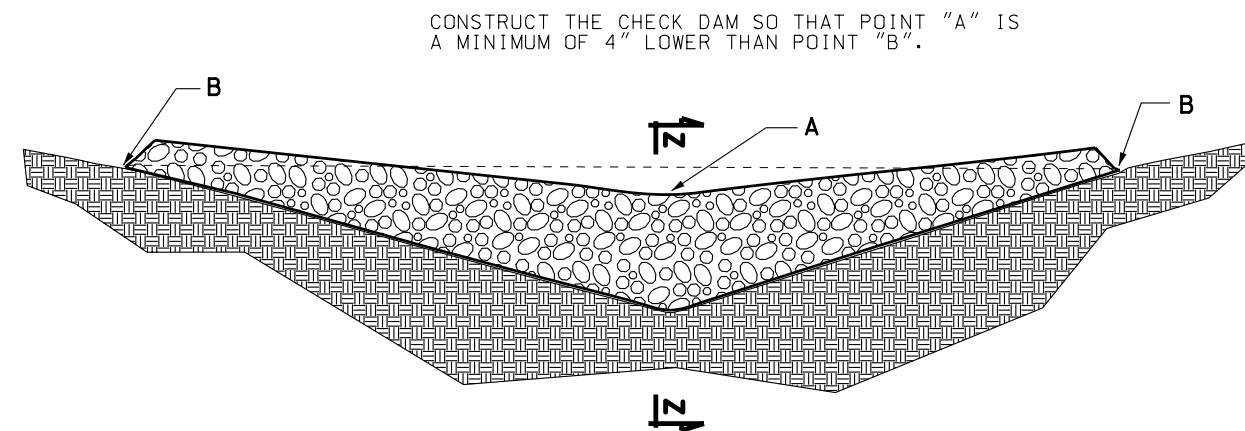
SECTION Y - Y



SECTION Z - Z



FIBER ROLL CHECK DAM



STONE CHECK DAM

MATERIAL QUANTITY CHART		
DITCH SIDE SLOPE	LENGTH OF FIBER ROLL REQUIRED FOR HALF OF DITCH	CUBIC YARDS OF STONE REQUIRED FOR HALF OF DITCH
2:1	4.5'	0.25
3:1	6'	0.35
4:1	8'	0.5
6:1	11.5'	0.7
8:1	15'	1.0
10:1	18.5'	1.2
12:1	22.5'	1.4

EXAMPLE: A CUT DITCH WITH A 6:1 FORE SLOPE AND A 2:1 BACK SLOPE WOULD REQUIRE A 16' MIN. FIBER ROLL OR 0.95 CUBIC YARDS MIN. OF STONE.

- NOTES FOR CHECK DAMS:

1. PLACE A CHECK DAM AT EVERY TWO-FOOT DROP IN ELEVATION ALONG THE CUT DITCH.
2. A 9" TO 12" DIAMETER FIBER ROLL CAN BE USED IN PLACE OF THE 18" ROLL PROVIDED A ROLL IS INSTALLED AT EVERY ONE-FOOT DROP IN ELEVATION ALONG THE CUT DITCH.
3. PLACE CHECK DAMS PERPENDICULAR TO THE FLOW LINE OF THE DITCH.
4. DO NOT PLACE CHECK DAMS ACROSS NATURAL STREAM BEDS.
5. DO NOT USE STONE CHECK DAMS WITHIN CLEAR ZONES.
6. CONSTRUCT CHECK DAMS SO THAT WATER DOES NOT FLOW AROUND THE ENDS OF THE DAM.
7. REMOVE SEDIMENT AS IT ACCUMULATES AND PLACE IT IN A STABLE AREA APPROVED BY THE ENGINEER.
8. AFTER SURROUNDING AREAS HAVE BEEN SEEDED AND MULCHED, SPREAD ROCK FROM CHECK DAMS TO LINE THE CUT DITCH AND BREAK APART FIBER ROLLS AND SPREAD THE STRAW OVER SEEDED AREAS.

[illegible]

~~UTAH DEPARTMENT OF TRANSPORTATION~~
~~STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION~~

RECOMMENDED BY [Signature] DATE AUG. 25, 2005	CHAIRMAN STANDARDS COMMITTEE APPROVED [Signature] DATE AUG. 25, 2005
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TEMPORARY EROSION CONTROL (CHECK DAMS)

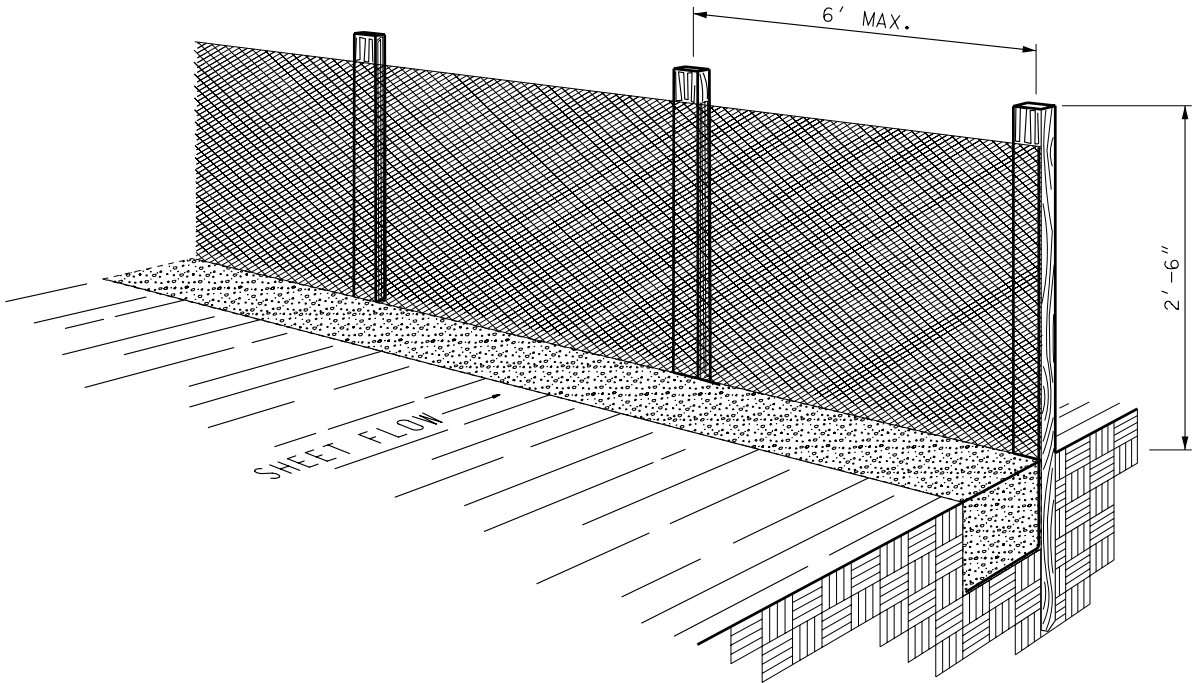
STANDARD DRAWING TITLE

STD DWG

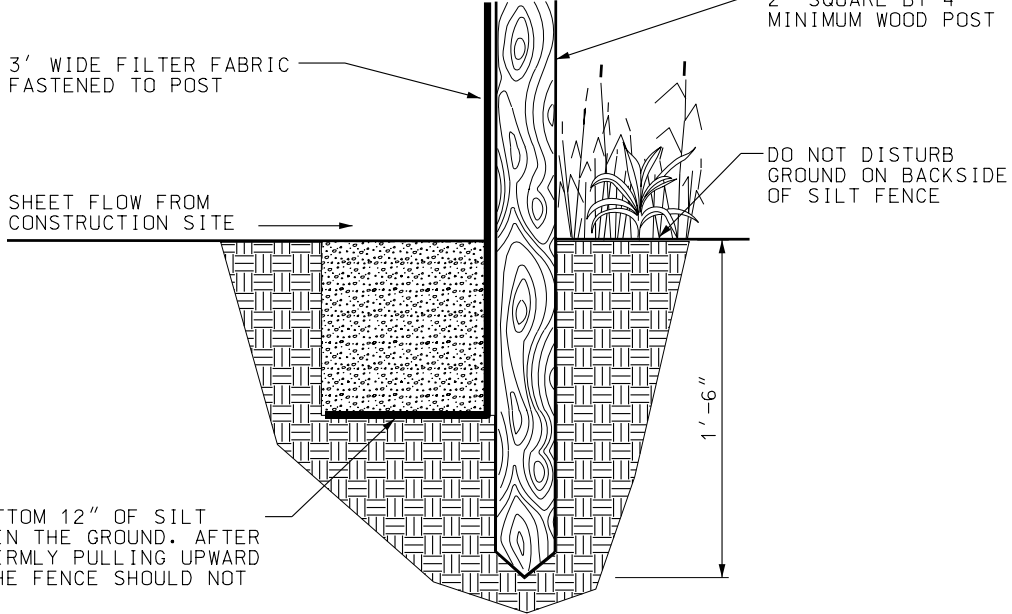
EN 1

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SILT FENCE

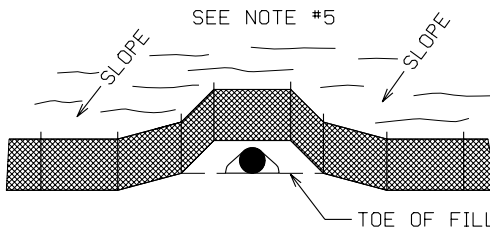


PERSPECTIVE VIEW

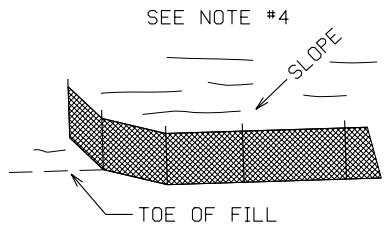


SECTION

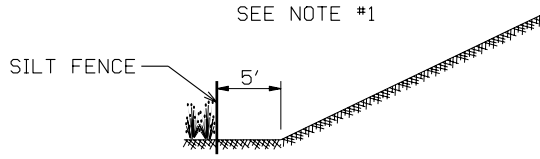
ENTRENCH THE BOTTOM 12" OF SILT FENCE SECURELY IN THE GROUND. AFTER INSTALLATION, FIRMLY PULLING UPWARD ON THE TOP OF THE FENCE SHOULD NOT DISLODGE IT.



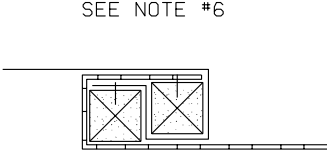
AROUND A PIPE OUTLET



AT END OF SILT FENCE



AT TOE OF FILL SLOPE



SPLICES (TOP VIEW)

SILT FENCE INSTALLATIONS

- NOTES FOR SILT FENCE:
1. WHERE PERMITTED, POSITION THE SILT FENCE 5' BEYOND THE TOE OF SLOPE.
 2. TO AVOID CREATING LOW POINTS ALONG THE SILT FENCE, ALIGN THE FENCE ALONG THE CONTOUR AS MUCH AS POSSIBLE. WHERE EXCESSIVE RUNOFF WILL ACCUMULATE AT A LOW POINT, PROVIDE AN OPENING IN THE FENCE AND INSTALL A SEDIMENT TRAP.
 3. WHEN EXCAVATING THE TRENCH, USE MACHINERY THAT WILL MINIMIZE DISTURBANCE.
 4. TO PREVENT RUNOFF FROM FLOWING AROUND THE ENDS OF THE SILT FENCE, RUN THE ENDS OF THE FENCE UP SLOPE.
 5. DO NOT PLACE SILT FENCE ACROSS POTENTIAL CONCENTRATED FLOWS (e.g., PIPE OUTLETS, DRAINAGE CHANNELS, CUT DITCHES).
 6. AVOID USING SPLICES ALONG THE FENCE AS MUCH AS POSSIBLE. IF A SPLICE IS NECESSARY, BEFORE POUNDING IN THE END POSTS, OVERLAP THE END POSTS AND TWIST 180 DEGREES.
 7. MAINTAIN A PROPERLY FUNCTIONING SILT FENCE THROUGHOUT THE DURATION OF THE PROJECT OR UNTIL DISTURBED AREAS HAVE BEEN VEGETATED.
 8. WHEN A STORM EVENT DEPOSITS SEDIMENT BEHIND THE FENCE, REMOVE THE SEDIMENT AND PLACE IT IN A STABLE AREA APPROVED BY THE ENGINEER.
 9. IN AREAS THAT HAVE BEEN SEEDED AND MULCHED, REMOVE SILT FENCE UNLESS THEY ARE PROTECTING A WETLAND OR WATER BODY.

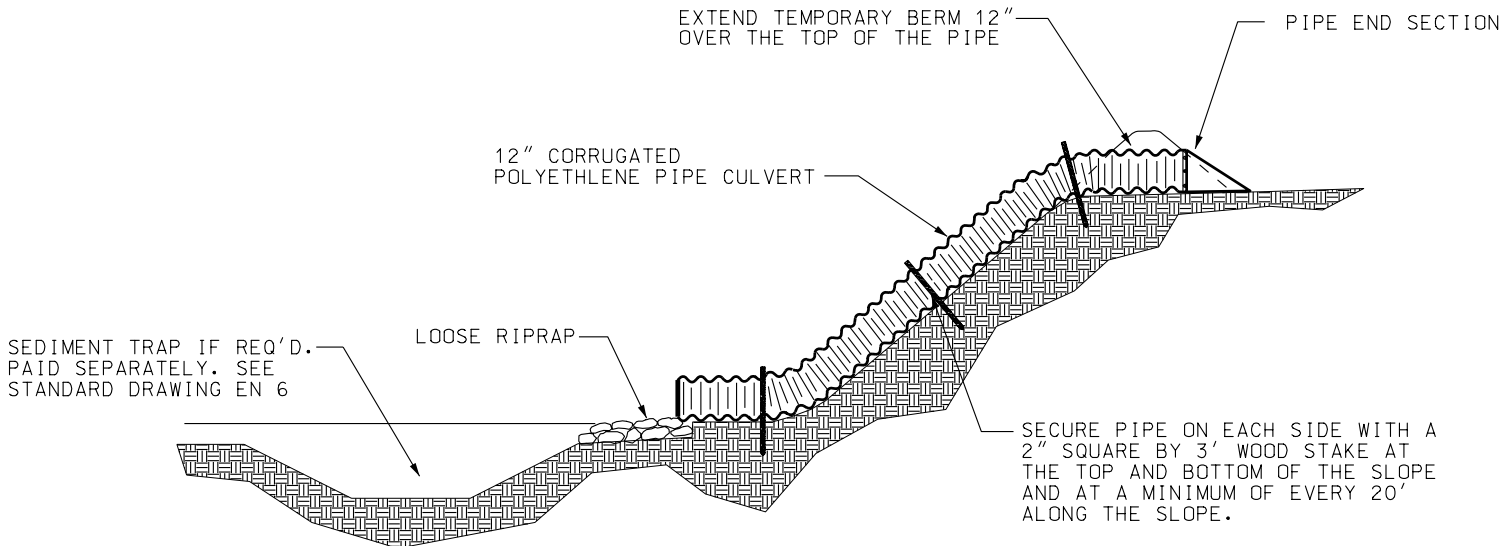
REVISIONS		NO.		DATE		APPR.		REMARKS	
1	08/25/05	T.J.	REVISED ENTIRE DRAWING.						

UTAH DEPARTMENT OF TRANSPORTATION		STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION		RECOMMENDED FOR APPROVAL		CHAIRMAN STANDARD COMMITTEE		DEPUTY DIRECTOR	
SALT LAKE CITY		SALT LAKE CITY		SALT LAKE CITY		SALT LAKE CITY		SALT LAKE CITY	
DATE		DATE		DATE		DATE		DATE	
AUG. 25, 2005		AUG. 25, 2005		AUG. 25, 2005		AUG. 25, 2005		AUG. 25, 2005	

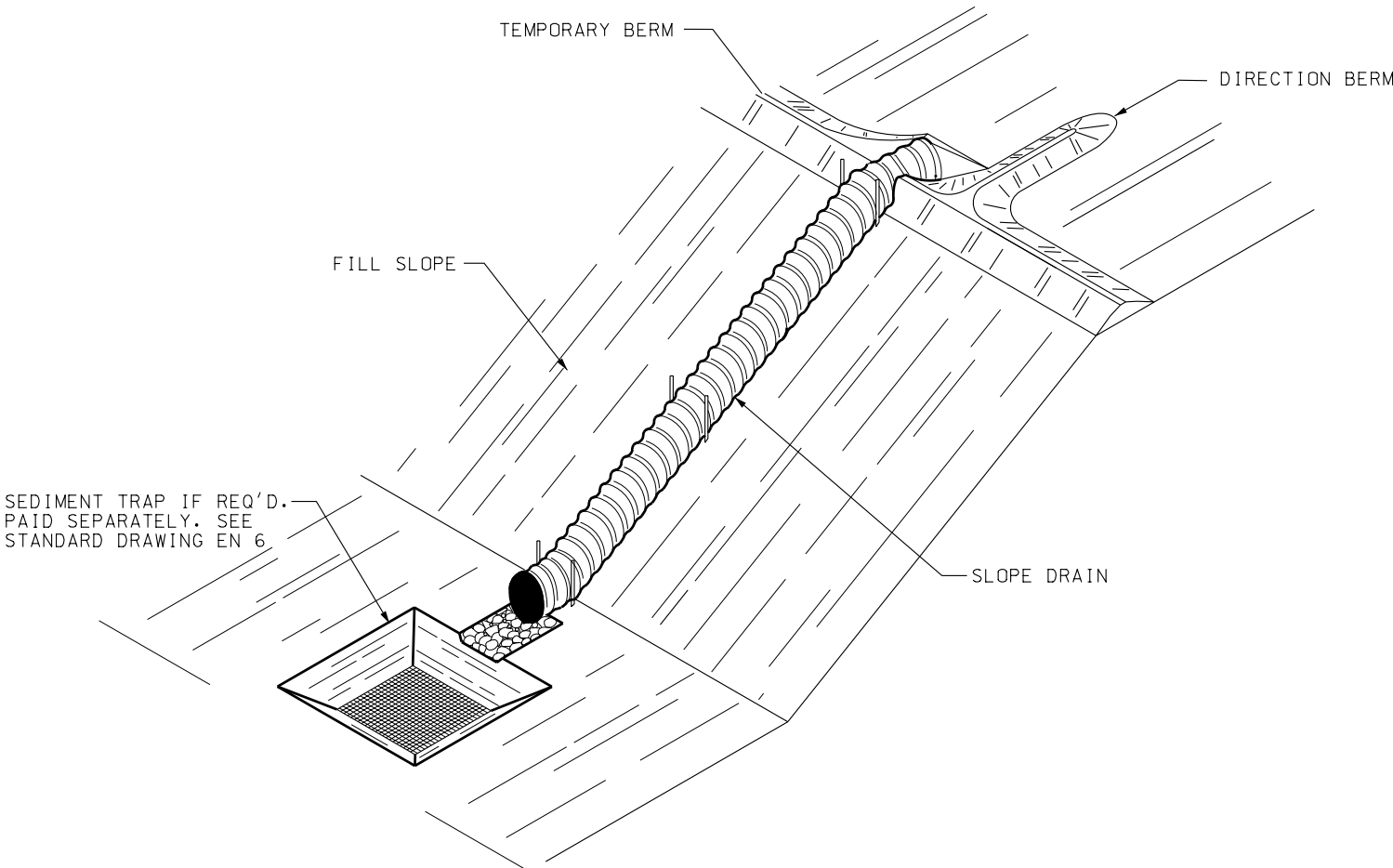
TEMPORARY EROSION CONTROL (SILT FENCE)		STANDARD DRAWING TITLE	
STD DWG		EN 2	

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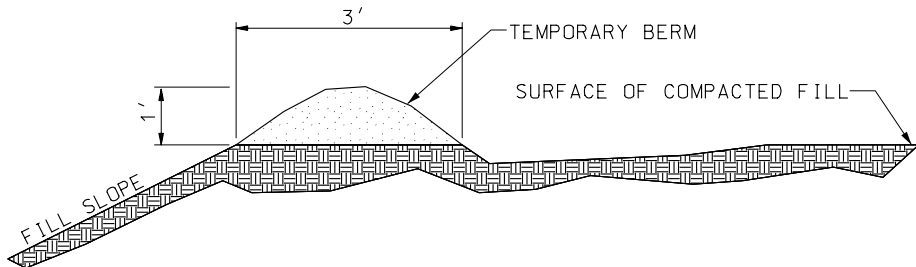
SLOPE DRAIN AND TEMPORARY BERM



SLOPE DRAIN SECTION



SLOPE DRAIN ISOMETRIC



TEMPORARY BERM

NOTES FOR TEMPORARY BERM:

1. COMPACT THE RIDGE OF EXISTING SOIL TO PROVIDE A NON-ERODIBLE BERM THAT DIVERTS STORM RUNOFF FROM RECENTLY CONSTRUCTED SLOPES. REPAIR ANY EROSION OF THE BERM IMMEDIATELY.
2. TEMPORARY BERMS ARE TYPICALLY USED IN CONJUNCTION WITH SLOPE DRAINS.

NOTES FOR SLOPE DRAIN:

1. COMPACT THE SOIL SURFACE AND BERMS AROUND THE ENTRANCE TO THE PIPE END SECTION TO PREVENT WATER FROM UNDERMINING THE PIPE AND ERODING THE SLOPE. REPAIR ANY EROSION AROUND THE INLET, OUTLET OR SLOPE IMMEDIATELY.
2. SECURE THE PIPE TO THE GROUND EVERY 20' TO PREVENT PIPE MOVEMENT AND SUBSEQUENT FAILURES DURING STORM EVENTS.
3. USE WATER-TIGHT FITTINGS AT ALL SLOPE DRAIN CONNECTIONS.
4. EXTEND THE SLOPE DRAIN AS REQUIRED TO COINCIDE WITH THE HEIGHT OF THE EMBANKMENT.
5. EXTEND THE DRAIN A MINIMUM OF 3' BEYOND THE TOE OF THE SLOPE AND PROVIDE OUTLET PROTECTION.
6. 50 PERCENT OF THE RIPRAP TO BE BETWEEN 6" AND 8" WITH A MAXIMUM SIZE OF 12" AND A MINIMUM SIZE OF 4".
7. IF A SEDIMENT TRAP CANNOT BE CONSTRUCTED AT THE PIPE OUTLET PROVIDE A SEDIMENT TRAPPING DEVICE BEFORE THE PIPE INLET.
8. MAINTAIN SLOPE DRAINS UNTIL SLOPES HAVE BEEN PERMANENTLY STABILIZED. REMOVE SLOPE DRAINS AS DIRECTED BY ENGINEER.

[illegible]

~~UTAH DEPARTMENT OF TRANSPORTATION~~

RECOMMENDED FOR APPROVAL	DATE
CHAIRMAN STANDING COMMITTEE	DATE
APPROVED	DATE

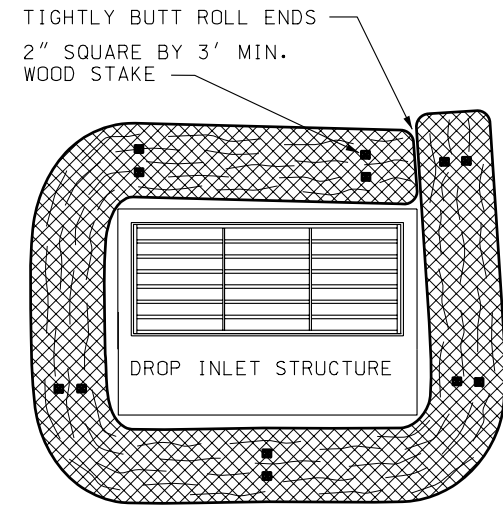
TEMPORARY
EROSION CONTROL
SLOPE DRAIN AND
TEMPORARY BERM)

[illegible]

STD DWG
EN 3

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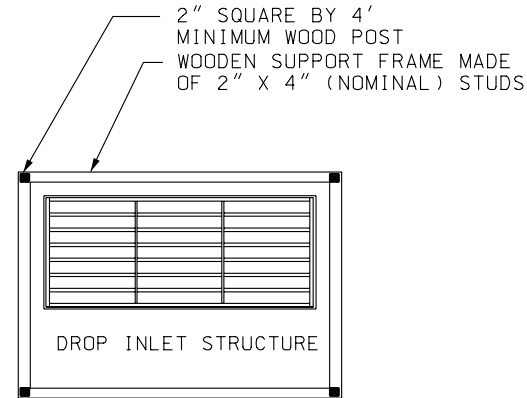
SILT FENCE
DROP INLET BARRIER



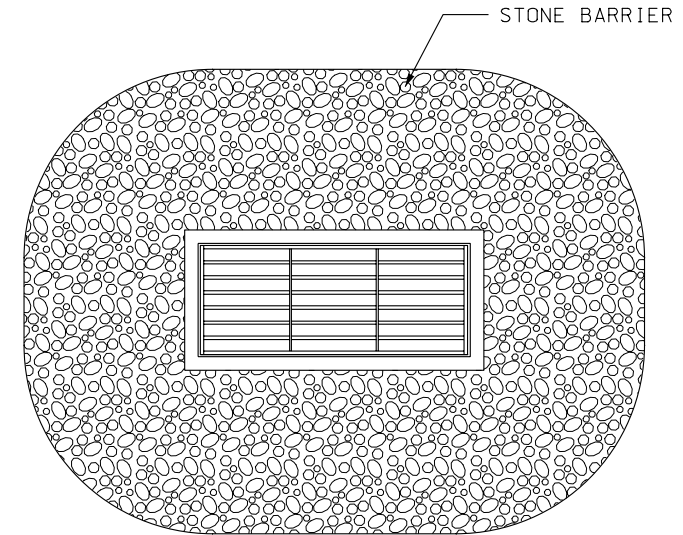
**SILT FENCE
DROP INLET BARRIER**

2" SQUARE BY 4'
MINIMUM WOOD POST

WOODEN SUPPORT FRAME MADE
OF 2" X 4" (NOMINAL) STUDS



STONE
DROP INLET BARRIER



SEE STD. DWG. EN 2
FOR SILT FENCE DETAIL.

2" x 4" (NOMINAL)
WOOD FRAME

STONE BARRIER: WELL GRADED,
2" TO 6" STONE

18" HIGH WITH 1.5:1
MAX. SIDE SLOPES

1. PLACE STONE BARRIER AS SHOWN AROUND THE INLET OPENING.
2. DO NOT USE STONE BARRIERS WITHIN THE CLEAR ZONE. INSTEAD USE THE FIBER ROLL OR SILT FENCE BARRIER.
3. IN MEDIAN AREAS, CONSTRUCT SO THAT THE TOP OF THE STONE BARRIER IS NOT HIGHER THAN THE ADJACENT ROADWAY.
4. MAINTAIN A PROPERLY FUNCTIONING STONE BARRIER THROUGHOUT CONSTRUCTION OR UNTIL DISTURBED AREAS CONTRIBUTING TO THE INLET HAVE BEEN PAVED OR VEGETATED.
5. REMOVE SEDIMENT AS IT ACCUMULATES AND PLACE IT IN A STABLE AREA APPROVED BY THE ENGINEER.

[illegible]

~~UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SHEET 1600-1-101~~

RECOMMENDED FOR APPROVAL	AUG.25, 2005
CHAIRMAN STANDARDS COMMITTEE APPROVED	DATE
DEPUTY DIRECTOR	AUG.25, 2005
	DATE

TEMPORARY
EROSION CONTROL
(DROP INLET BARRIERS)

STD DWG
EN 4

UNITED STATES OF AMERICA

REMARKS

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Diagram illustrating the cross-section of a stone barrier on a pipe culvert. The barrier is shown with a height of 1.8 m and a base width of 1.5 m on each side of the culvert. The top of the barrier is labeled "FILL SLOPE". The culvert is labeled "PIPE CULVERT". The vertical wall at the end of the culvert is labeled "PIPE END SECTION". The stone barrier is labeled "STONE BARRIER".

The diagram illustrates a cross-section of a stone barrier installed at the end of a pipe culvert. The culvert is shown as a horizontal pipe on the left, with a section labeled 'A' indicated by a vertical line and arrows. The pipe ends in a semi-circular structure labeled 'PIPE END SECTION'. To the right of the pipe end is a large, semi-circular stone barrier, also labeled 'A', which is filled with a pattern of stones. The barrier is labeled 'STONE BARRIER: WELL-GRADED 2" TO 6"'. The barrier is positioned against a 'FILL SLOPE' on the right, which is indicated by a dashed line and an arrow. The top of the barrier is labeled 'TOE OF FILL SLOPE'. The width of the barrier is specified as '.5 X WIDTH OF END SECTION'. The diagram is a technical drawing with labels and arrows pointing to the various components.

NOTES FOR PIPE INLET BARRIER:

-
- STONE: WELL GRADED,
2" TO 6"
- $\frac{1}{2}$ " BY $\frac{1}{2}$ " WIRE MESH
PLACED IN FRONT OF OPENINGS
- BUILDING BLOCK
- 2" X 4" (NOMINAL) WOOD STUD
- CURB INLET
- This diagram illustrates a cross-section of a curb inlet. On the left, a sloped area is filled with well-graded stone (2" to 6" in size). A $\frac{1}{2}$ " by $\frac{1}{2}$ " wire mesh is placed in front of the openings in the building blocks. The building blocks are arranged in a grid pattern. A 2" x 4" (nominal) wood stud is shown running horizontally through the building blocks. The curb inlet is shown on the right, with a vertical section and a horizontal section. The curb inlet is made of concrete and has a sloped top surface.

STONE: WELL GRADED,
2" TO 6"

BUILDING BLOCK

2" X 4" (NOMINAL)
WOOD STUD

Diagram illustrating a cross-section of a stone wall with a window opening. The wall is constructed from stone (well graded, 2" to 6") and building blocks. A 2" x 4" (nominal) wood stud is shown supporting the structure above the window opening. The window frame is shown below the opening.

NOTES FOR CURB INLET BARRIER:

- | REVISIONS | | |
|-----------|----------|--|
| | T.J. | REVISED ENTIRE DRAWING, TITLE CHANGED. |
| 1 | 08/25/05 | |

~~UTAH DEPARTMENT OF TRANSPORTATION~~
~~STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION~~

RECOMMENDED FOR APPROVAL	AUG. 25, 2005
CHAIRMAN STANDARDS COMMITTEE	DATE
APPROVED	AUG. 25, 2005
DEPUTY DIRECTOR	DATE

TEMPORARY EROSION
CONTROL
(PIPE INLET AND
CURB INLET BARRIERS)

STANDARD DRAWING TITLE

STD DWG
EN 5

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A cross-sectional diagram of a trench. The top opening is marked with a dimension line and labeled "3'". The trench walls are shown with a hatched pattern, and the bottom is filled with rounded stones or rubble.

9" DIAMETER LOOSE RIPRAP PLACE 12" DEEP ALONG INFLOW OF THE TRAP

3'

2:1

12" MIN.

2:1

FLOW

The diagram shows a cross-section of a trap inlet. A dashed line represents the ground surface. A solid line represents the trap structure. The area between the dashed line and the solid line is filled with a cross-hatch pattern. A section of the trap structure is filled with a stippled pattern, representing riprap. This riprap section is 3 feet wide at the top and 12 inches deep. The slopes of the trap structure are 2:1. An arrow labeled 'FLOW' points to the right, indicating the direction of water flow into the trap.

Diagram illustrating a circular settling tank or pond structure. The tank is circular with a central circular skimmer. The inlet is on the left, labeled "INLET" and "CONCENTRATED FLOW". The outlet is on the right, labeled "OUTLET". The length of the tank is indicated as "LENGTH = 2X WIDTH". Section lines A-A and B-B are shown. A note on the right states: "IF OVERFLOW WATER RUNS ACROSS DISTURBED GROUND, STABILIZE IT WITH STONE OR CHANNEL LINER".

NOTES FOR SEDIMENT TRAPS:

1. PLACE SEDIMENT TRAPS AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
2. IDENTIFY THE STORAGE CAPACITY OF EACH SEDIMENT TRAP IN THE PROJECT PLAN SET.
3. CONSTRUCT TRAP LENGTH TWICE AS LONG AS THE WIDTH.
4. MAINTAIN A PROPERLY FUNCTIONING SEDIMENT TRAP THROUGHOUT CONSTRUCTION OR UNTIL DISTURBED AREAS CONTRIBUTING TO THE BASIN HAVE BEEN PAVED OR SEEDED AND MULCHED.
5. REMOVE SEDIMENT AS IT ACCUMULATES AND PLACE IT IN A STABLE AREA APPROVED BY THE ENGINEER.

PAVED PUBLIC ROAD

50' MINIMUM

20' RAD.

2" - 3" ROCK
6" MINIMUM THICKNESS

AS REQ'D.

This diagram illustrates a rock energy dissipator designed for a road intersection. It shows a paved public road on the left, indicated by a dashed line. The dissipator is a trapezoidal structure made of rock, with a minimum width of 50 feet and a 20-foot radius at the intersection. The rock is specified as 2 to 3 inches in size with a minimum thickness of 6 inches. The structure is shown in a perspective view, with a cross-section indicating the rock layer and a base layer labeled 'AS REQ'D.' (as required).

1. PLACE STABILIZED CONSTRUCTION ENTRANCES AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
2. MAINTAIN A PROPERLY FUNCTIONING CONSTRUCTION ENTRANCE THROUGHOUT CONSTRUCTION OR UNTIL DISTURBED AREAS HAVE BEEN PAVED.
3. DO NOT ALLOW VEHICLES LEAVING THE CONSTRUCTION SITE TO TRACK MUD ONTO PAVED ROADS.

[illegible]

~~UTAH DEPARTMENT OF TRANSPORTATION~~
~~STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION~~
~~SALT LAKE COUNTY~~

RECOMMENDED FOR APPROVAL	DATE
<i>[Signature]</i>	AUG.25, 2005
CHAIRMAN STANDARDS COMMITTEE	DATE
<i>[Signature]</i>	AUG.25, 2005
APPROVED	DATE
<i>[Signature]</i>	AUG.25, 2005
DEPUTY DIRECTOR	DATE
<i>[Signature]</i>	AUG.25, 2005

TEMPORARY EROSION
CONTROL
(SEDIMENT TRAP AND
STABILIZED
CONSTRUCTION ENTRANCE)

STANDARD DRAWING TITLE

STD DWG
EN 6

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Standard Committee Submittal Sheet

Name of preparer: John Leonard
Title/Position of preparer: Operations Engineer
Specification/Drawing/Item Title: Traffic Slow Down
Specification/Drawing Number: Section 00555M
Date Process Started: _____ Date Process Completed: _____
Status: ' Approved ' Disapproved ' Sent Back For Review

Enter appropriate priority level: 3 Used previously submitted specification and submittal
(See last page for explanation) _____ sheet.

Sheet not required on editorial or minor changes to standards.

NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page, (<http://www.udot.utah.gov/esd/specbook/StandardsCommittee.htm>).
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

There have been instances where contractor personnel, without the knowledge of the Department or local law enforcement, have performed a slow down on the interstate. Some of these have resulted in crashes. Senior management has requested a supplemental specification be created to address this issue.

- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

There is no change to measurement and payment. This supplemental requires notification and a set procedure for performing a slow down.

C. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

Construction Engineers

Sent to all Construction Engineers. Only response from Karl Verhaeren with the concern that it is hard to have one size fit all with both rural and urban facilities.

I agree, but when you have specific language about the number of lanes...under (d) "...the first two lanes...", it's now describing a situation that doesn't routinely exist. When a contractor reads this, I believe they will view it as non-applicable on a two-lane interstate. In my opinion, we just need to be careful about describing a rather specific situation and then working it into a one-size-fit-all approach, and look for ways on either a Department special or supplemental specification to provide for flexibility in the language so that the special or supplemental fits well with 90%+ of the projects we do.

Peak hours may also vary on different routes. Another approach may be to prompt the designer to enter the peak traffic hours. Are there consequences of exceeding the five minute slowdown?

Response:

Peak hours and durations may be modified by the Region Traffic Engineer, and the designer has the option of proposing a Modified Specification in their project to address any site specific issues.

Contractors

Was provided to Mont Wilson of AGC. No responses received.

Suppliers N/A

Consultants (as required)

Was provided to Tyler Yorgeson of the ACEC

I sent copies of the Special Provision for Section 0555, Prosecution and Progress, Limits of Operations, Traffic Control to ACEC members for review. I did not receive any specific comments to pass along to you.

I wanted to confirm to you with this e-mail that not having received any comments from ACEC by June 1 does indeed indicate that we do not have any specific comments on the proposed changes.

Tyler Yorgason P.E.
Civil Science, Inc.

Others (as appropriate)

Maintenance

Was sent to Central Maintenance. Response from Richard Clarke, Engineer for Maintenance.

This looks fine to me
Rich

Traffic and Safety

Was sent to all Region Traffic Engineers. Received response from two.

Mack Christiansen, R-2.

John I do not understand the need for this special. all our slow downs are coordinated with the IMT. when they are notified in advance they will arrange for the highway patrol and will set up what other ramp controls are also needed. It works quite well.

Response:

While IMT may be able to assist the officers and the contractor as resources and availability allow, they do not have the statutory authority that public safety officers have, and IMT is available only in very limited areas of the state. It is not the responsibility of the RE, IMT, or even the officers to make the arrangements for this work. It is the contractor's responsibility to make the coordinations that are necessary for his work to proceed in a safe manner.

Others:

Rob Wright, R-1

Is this a special that will be required on all jobs, or an as-determined by the design engineer?

I think a "one size fits all" spec is probably not a real great idea. Could we have the peak hours determined by either the Region Traffic Engineer or Resident Engineer. They will not be the same in rural areas as in urban areas. Also, 5 minutes doesn't seem like a lot of time to do some of the temp closures we have done in the past. Could we have the time limited by the RE?

Also is 00555 the place for this? I think it would be better in 01554.

Thanks for the opportunity to comment.
Rob

Dan Young, R-1

The only change I would suggest is on the section where it says:

"Notify the Department two days prior to slow down."

I would change it to read:

"Notify and obtain approval from the Engineer a minimum of two days prior to slow down."

Dan

Scott Andrus, R-3

John, I would agree with Rob and Karl that this should be addressed in a project specific approach rather than a one size fits all. Thanks

FHWA

Was sent to FHWA—no responses

D. Costs? (Estimates are acceptable.)

1. Additional costs to average bid item price.

Possible increase to lump sum cost of traffic control if reimbursement is required for law enforcement.

2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).

Will require coordination with law enforcement to provide officer and equipment.
May require additional resources from contractor/maintenance if closure

3. Life cycle cost.

N/A

E. Safety Impacts?

Provide better coordination among the various groups responsible for safety on a project (Traffic and Safety, Construction, Maintenance, Maintenance, and the Contractor). We have experienced severe crashes, and adherence to this Specification should eliminate this issue.

F. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

This is the first time this has been presented to the Standards Committee. It has been prepared at the request of Senior Administration.

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

- | | |
|------------|---|
| Priority 1 | Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised. |
| Priority 2 | Upon posting, this impacts projects being advertised. |
| Priority 3 | Upon posting, the approved standard takes effect two weeks later for projects being advertised. |

**Supplemental Specification
2005 Standard Specification Book**

SECTION 00555M

PROSECUTION AND PROGRESS

Add the following to Part 1, Article 1.9:

- D. Traffic Control:
 - 1. Traffic slow downs are isolated events where traffic on a highway is reduced in speed to provide a gap for work to proceed (examples include the crossing of the highway with heavy equipment or the adjustment of traffic control devices).
 - a. Notify the Department two days prior to slow down.
 - b. Use a Highway Patrol Trooper (or other public safety officer), in a marked vehicle with overhead flashing lights, to conduct the slowdown. Make arrangements two days prior to the slowdown with the public safety agency for use of the officer and vehicle.
 - c. Use contractor vehicles, equipped with overhead amber flashing beacons, to supplement the public safety vehicle in the slow down when required by the officer.
 - d. Use the officer in the marked vehicle to slow down the first two lanes, and then use either contractor supplied vehicles and/or additional officers and marked vehicles at the rate of one vehicle per lane thereafter to effect the slow down. Additional vehicles as described in this Section may be used in the traffic slow down.
 - 2. No traffic slowdowns will be allowed during peak hours.
 - a. Peak Hours: 6:30 am to 9:00 am, 3:30 pm to 7:00 pm, M-F.
 - 3. Length of duration of any traffic slowdown not to exceed 5 minutes

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Standards Committee Submittal Sheet

Name of preparer: Deryl Mayhew, Robert Strong, Blake Hansen

Title/Position of preparer: ITS Engineer

Specification/Drawing/Item Title: ATMS Standard Specifications

Specification/Drawing Number: 13551 through 13595

Enter appropriate priority level: Used previously submitted submittal sheet.
(See last page for explanation) 23

Sheet not required on editorial or minor changes to standards. Check with Standards Section.

NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page.
(<http://www.udot.utah.gov/index.php/m=c/tid=303>)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

[Response] In April 2005, many changes were made to the AT Series Standard Drawings. Some of these changes caused inconsistencies with the ATMS Standard Specifications. The proposed changes were mainly initiated in order to make them consistent with the updated Standard Drawings.

- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

[Response] No change.

- C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site, Members page at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)

[Response] The modified standards were submitted to the AGC by Sam Sherman for comment on 5/25. No comments were received.

ACEC Comments: (Use as much space as necessary.)

[Response] The modified standards were submitted to the ACEC by Sam Sherman for comment on 5/25. No comments were received.

- D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

Note: There is a two-week response time set for this item. Allow Stakeholders two weeks to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

[Response] Several comments were received from the In-house ATMS maintenance and construction supervisor, William (Bill) Butterfield.

Construction Engineers

[Response] No comments made.

Contractors (Any additional contacts beyond "C" above.)

[Response] No comments made

Suppliers

[Response] No comments made.

Consultants (as required) (Any additional contacts beyond "C" above.)

[Response] TransCore ITS provided comments and assisted UDOT in revising the Standard Specifications. Revisions were made to be consistent with Standard Drawings, culminating in the finished Standard Specifications submitted.

Others (as appropriate)

[Response] No comments made.

- E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

[Response] No impact anticipated.

- F. Costs? (Estimates are acceptable.)

1. Additional costs to average bid item price.

[Response] No impact anticipated.

2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).

[Response] No impact anticipated.

3. Life cycle cost.

[Response] No impact anticipated.

- G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.) (Estimates are acceptable.)

[Response] No impact anticipated.

To be consistent with changes to Standard Drawings.

- H. Safety Impacts?

[Response] It is not anticipated that the revisions will have any effect on safety.

- I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

[Response] Many changes were made to stay consistent with the ATMS Standard Drawings which were revised in April.

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

- | | |
|------------|---|
| Priority 1 | Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised. |
| Priority 2 | Upon posting, this impacts projects being advertised. |
| Priority 3 | Upon posting, the approved standard takes effect four weeks later for projects being advertised. |

**Supplemental Specification
2005 Standard Specification Book**

SECTION 13551M

GENERAL ATMS REQUIREMENTS

Delete Article 1.3 and replace with the following:

1.3 REFERENCES

- A. AASHTO M 232: Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware
- B. AASHTO M 314: Standard Specification for Steel Anchor Bolts
- C. AASHTO Roadside Design Guide (current edition)
- D. AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals (current edition)
- E. ASTM D 3005, Type I or II. UL 510
- F. American Wire Gauge (AWG)
- G. Electronic Industries Association (EIA) and Telecommunications Industry Association (TIA) Specifications
- H. International Municipal Signal Association Regulations
- I. National Electric Code (NEC)
- J. Rural Electrical Association (REA) Bulletins
- K. USDA Rural Utilities Service (RUS) Bulletin
- L. Underwriters Laboratory (UL)

Delete Article 2.1 and replace with the following:

2.1 DOCUMENTATION

A. Submittals

1. Provide two copies of all documentation to the engineer. Install one additional copy each field cabinet.
- ~~2. Provide one copy of the test reports, configuration data, and as-built drawings in each of the field cabinets.~~
32. The general purpose and content of all required submittals is described in the following table. Refer to the appropriate specifications for the details of the submittal requirements and test procedures for each ATMS device type. Obtain UDOT's newest version of the test procedures for the local field operations test from the UDOT website. Refer to <http://www.udot.utah.gov/index.php/m=c/tid=719>.

Name	Timeline	Description
Contractor Furnished Material and Equipment Lists	Submit within fifteen business days from the Notice to Proceed.	Includes the name of manufacturer, size, and identification number. All contractor furnished equipment must be approved by the Engineer prior to ordering.
Test Reports (for Cable and Conductor test, the Local Field Operations Test, and Acceptance Tests.)	Submit within five business days from the completion of a successful test.	To be provided after the completion of a successful test. Test Reports are required for each appropriate ATMS device installation, including, but not limited to CCTV, VMS, RWIS, WIM, Traffic Monitoring Detector Loops or other specified detection device, and Fiber Optic Communication Systems. Provide Test Reports in a neatly bound (3' hole) and printed format. The Test Reports will include the following: 1) All test results (including failed tests) 2) Description of any observed discrepancies 3) Description of required corrective action 4) Estimated time to complete corrective action and re-test 5) Results of any corrective action
Completion Notice	Provide to the Engineer after all devices have successfully passed the Local Field Operations Tests, at least 5 business days prior to beginning acceptance tests.	Consists of the certification that all ATMS installations are compliant with all project requirements. Use the Local Field Operations Testing Completion Notification Form obtained from the UDOT website. Refer to http://www.udot.utah.gov/index.php/m=c/tid=719 .

Name	Timeline	Description
Compliance Certificate	Submit within five business days of receipt by the Manufacturer for each site.	Provide an installation compliance certification by the manufacturer on required equipment.
Manufacturer's Equipment Documentation	Must be received and accepted prior to Final Acceptance	For all contractor furnished items, provide all factory issued manuals per this section, article 2.1, paragraph B, software, detailed shop drawings, wiring diagrams, certifications, warranties, instruction sheets, and parts lists to the engineer.
As-Built Drawings	Must be received and accepted prior to Final Acceptance	Refer to section 01721

- B. Factory Issued Manuals
 - 1. Acceptable factory manuals must contain technical, diagnostic, and maintenance (preventative and troubleshooting) information. Advertising brochures and catalog cuts not accepted.

Delete Article 3.3 paragraph C and replace with the following:

- C. Follow the guidelines outlined in the AASHTO Roadside Design Guide (current edition), Chapters 3 and 4 for minimum distances from the traveled way to installed equipment.

Delete Article 3.5 paragraph C and replace with the following:

- C. Conform to minimum requirements of AASHTO M 314 for anchor bolts. Do not weld anchor bolts to reinforcing steel. Galvanize all nuts, washers and anchor bolts in accordance with AASHTO M 232.
- D. Install anchor bolts in accordance with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals (current edition) Article 5.17.

END OF SECTION

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SECTION 13552M

RAMP METER SIGNALS AND SIGNING

Delete Article 1.1 paragraph A and replace with the following:

- A. Furnish and install conduit, junction boxes, signal heads, signing, mounting brackets, wire, grounding, and foundations. Install all state furnished items. Includes all materials, labor, workmanship, equipment, testing, documentation, and incidental items required to install and test a complete and operational Ramp Meter system as shown on the plans and details.

Delete Article 1.3 and replace with the following:

- A. AASHTO Standard Specifications for Highway Bridges
- B. AASHTO Standard Specifications for Highway Bridges: Division II - Construction, Section 5: Drilled Piles and Shafts
- C. AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals (current edition)
- D. American Iron and Steel Institute (AISI)
- E. American National Standards Institute (ANSI)
- F. Manual on Uniform Traffic Control Devices (MUTCD)
- G. National Electric Code (NEC)
- H. Underwriters Laboratories (UL)

Delete Article 2.2 and replace with the following:

2.2 RAMP METER POLE MOUNT SIGNAL ASSEMBLY

- A. 8-inch 1 section signal head with white LED Module for enforcement. No back plate required.

- B. For all signal heads: Refer to Section 02892. Louvered back plate required.
- C. Regulatory Sign: MUTCD R10-6; 24-inch x 36-inch.
- D. 24-inch x 18-inch 1 VEHICLE PER GREEN Sign: Refer to AT series Standard Drawings.
- E. All signal head housings: yellow with hoods.
- F. Signal Pole: Refer to Section 02892 and SL series Standard Drawings.
- G. Foundation Concrete: Class AA(AE) Concrete (Refer to Section 03055).
- H. Provide two “Z” bars on the back of the sign to support against thrown snow. Refer to SL Series Standard Drawings.

Delete Article 2.3 and replace with the following:

2.3 RAMP METER MAST ARM SIGNAL ASSEMBLY

- A. For 12-inch signal heads: Refer to Section 02892. Louvered back plate required.
- B. 60-inch x 36-inch 1 VEHICLE PER GREEN EACH LANE Sign: Refer to AT series Standard Drawings.
- C. All signal head housings: yellow with hoods.
- D. Signal Pole: Refer to SL series Standard Drawings.
- E. Reinforcing Steel: Coated steel (Refer to Section 03211).
- F. Concrete: Class AA(AE) Concrete (Refer to Section 03055).

Delete Article 2.4 and replace with the following:

2.4 ADVANCE FLASHING BEACON SIGN

- A. Two 8-inch signal heads with yellow LED Module: Refer to Section 02892. No back plate required.
- B. Warning Sign: Modified WS3-3, 36-inch x 36-inch. Refer to AT Series Standard Drawings.
- C. 30-inch x 24-inch black on yellow METERING WHEN FLASHING Sign: Refer to AT series Standard Drawings.
- D. All signal head housings: yellow with hoods.
- E. Signal Pole: Refer to Section 02892 and SL series Standard Drawings.
- F. Foundation Concrete: Class AA(AE) Concrete (Refer to Section 03055).
- G. Provide two “Z” bars on the back of the sign to support against snow plow activity. Refer to SL Series Standard Drawings.

Delete Article 2.5 paragraph and replace with the following:

2.5 BOLTS AND NUTS

- A. Follow Section 02892.

Delete Article 2.6 paragraph A and replace with the following:

- A. Provide one 7-conductor signal cable to each signal head. Follow section 02892 for signal cable specifications.

Add the following to Article 2.8:

- C. Use 240-volt 400 watt luminaries if 480-volt power service is not available.

Delete Article 3.2 and replace with the following:

3.2 FOUNDATION

- A. Conform to AASHTO’s Standard Specifications for Highway Bridges for all material and workmanship.

- B. Prior to work, verify that the installation of the signal heads, mast arm, pole, and foundation in the location marked in the field has no conflict with existing utilities, underground and overhead. Comply with all utility and Blue Stakes requirements.
- C. See AT Series Standard Drawings for ramp meter signal assembly and advance flashing beacon assembly details and placement.
- D. Excavation: Refer to Section 13551.
- E. Construct caissons to conform to AASHTO Standard Specifications for Highway Bridges: Division II - Construction, Section 5: Drilled Piles and Shafts. Drill caissons into either native soil or compacted fill.
 - 1. If formwork is required during drilling, the forms may be withdrawn during concrete placement.
 - 2. Cast the top of the caisson against the formwork for appearance.
- F. Place concrete directly into the excavation. Use minimum forming.
- G. Do not weld reinforcing steel, conduit, or anchor bolts; tie reinforcing steel and conduit securely in place.
- H. Install Reinforcing Steel according to Section 03211.
- I. Use Class AA(AE) for all cast-in-place concrete. Cap all conduits before placing concrete.
- J. Install weep hole in foundation per SL series Standard drawings.

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SECTION 13553M

ATMS CONDUIT

Delete Article 1.3 and replace with the following:

1.3 REFERENCES

- A. ASTM D 2241: Standard Specification for Poly-Vinyl Chloride (PVC) Pressure-Rated Pipe (SDR Series)
- B. American National Standards Institutes (ANSI)
- C. American Wire Gauge (AWG)
- D. American National Standards Institutes (ANSI)
- E. International Municipal Signal Association (IMSA) Standards
- F. National Electric Code (NEC)
- G. National Electrical Manufacturers Association (NEMA)
- H. Railroad Specifications
- I. Underwriters Laboratory

Delete Article 2.1 paragraph H and replace with the following:

- H. Provide fiber optic and electrical buried cable marker warning tape that meets the following requirements:
 - 1. Material: Composite reinforced thermoplastic.
 - 2. Tape Color: Orange (communication) or Red (electric).
 - 3. Text: Caution Buried Communication Cable or Caution Buried Electric (front and back).
 - 4. Maximum distance between text: 5 feet.
 - 5. Text Color: Black.
 - 6. Width: 3-inch minimum (face or diameter).

Delete Article 2.1 paragraph I and replace with the following:

- I. Provide 1 green insulated IMSA 51-3 #14 locator wire in 1-inch conduit in each trench where ATMS Conduit is installed. Place the locator wire conduit at the top of all other conduit in the trench as shown in AT series Standard Drawings. Install locator wire in existing non-multiduct conduit where new fiber optic cable is to be installed.

Delete Article 3.1 paragraph F and replace with the following:

- F. Install all conduit bends to have a radius that is not less than the following:
 - 1. 24 inches within the cabinet and pole foundations
 - 2. 36 inches in all other locations

Delete Article 3.1 paragraph Q item 3 and replace with the following:

- 3. Reduced maximum spacing if horizontal or vertical deflection prevents the installation of cable within maximum tensile rating of the cable or location wire.

Delete Article 3.2 paragraph A and replace with the following:

- A. Paved Surface (asphalt concrete):
 - 1. Install T-patch over trenched area according to AT Series Standard Drawings.
 - 2. Saw cut (Refer to Section 02705) roadway-to-roadway base on both sides of trench to provide clean, straight wall for T-patch prior to any backhoe use per Section 02705.
 - 3. Refer to AT series Standard Drawings for depth of flowable fill under paved surfaces.
 - 4. Minimum soil compaction under pavement: 96 percent.
 - 5. Evenly apply tack coat before final backfill.
 - 6. Restoration patch: match the composition, density, and elevation (1/4 inch), of the existing surface per Section 02741.

Delete Article 3.3 paragraph F and replace with the following:

- F. Install manufactured sweeps (11 1/4, 22 1/2, 45, 90 degree angle) with conduit compatible bell and spigot ends. Do not field bend conduit.

Add the following to Part 3, Article 3.4 paragraph C

- C. Contain and remove all drilling fluid outside the bore immediately. Contractor's estimate will not be processed until all drilling fluid outside the bore has been removed and properly disposed of.

Add the following to Part 3, Article 3.5 paragraph C

- C. Use existing conduit only in-situ and as approved by the Engineer or shown on design plans. Use new conduit on all new installations.

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SECTION 13554M

POLYMER CONCRETE JUNCTION BOX

Delete Article 2.2 and replace with the following:

2.2 JUNCTION BOXES AND LIDS

- A. Provide junction boxes and vaults that resist water absorption in accordance with ASTM D 570.
- B. Select Junction Boxes for load rating as defined on AT series Standard Drawings as follows:
 - 1. Load Rating 1: Incidental Vehicular Traffic
 - a. In any paved area immediately adjacent to the mainline, such as shoulders, snow storage areas, or vehicle pullout areas, provide boxes, rings, and lids that sustain a minimum vertical test load of 33,500 lbs over a 10-inch x 20-inch square.
 - 2. Load Rating 2: Non-wheel Loading Accessible
 - a. In area not in traveled way, provide boxes, rings, and lids that sustain a minimum vertical test load of 22,500 lbs over a 10-inch x 20-inch square.
- C. Provide a poured-in-place 1-inch thick grout floor, with a 1-inch diameter drain, for all type I, II, and III-Polymer Concrete Junction Boxes or a box with a prefabricated floor with a 1-inch drain hole. Refer to ASTM C 579 and ASTM C 580 for test methods for grout.
- D. Provide lid for all junction boxes as specified by application.
- E. Provide lids with a non-skid surface with minimum coefficient of friction of 0.50, per ASTM C 1028. Coatings will not be approved.

- F. Manufacture lids with the following markings in the logo area, in 1-inch recessed letters:
 - 1. “Traffic Signal” when the junction box contains cables or wires for traffic signal (Refer to Section 02892), CCTV, VMS, RWIS, WIM, ramp meter, traffic monitoring, or any other ATMS element (Refer to Section 13551).
 - 2. “Electric” when the junction box contains power conductors used for traffic signal, CCTV, VMS, RWIS, WIM, ramp meter, traffic monitoring, or any other ATMS element.
 - 3. “Street Lighting” when the junction box contains street lighting conductors only. Inscribe “High Voltage” below the words “Street Lighting” when the junction box contains voltage above 600 V.
 - 4. “Communication” when the junction box contains multi-duct conduit for future use.
 - 5. “Sprinkler Control” when sprinkler control conduit enters the junction box.
- G. Provide lids with recessed access point to allow removal of cover with a hook or lever. Repair damage to the pulling point in the lid.
- H. Provide lids with vandal-resistant stainless steel recessed bolts.

Delete Article 3.1 paragraph H through N and replace with the following:

- H. Install bushings on end of all conduit prior to cable installation.
- I. Do not install conduit in corner of junction box or within 2 inches of corner of junction box. Extend conduit 2 inches beyond the inside wall of the junction box. Refer to AT series Standard Drawings.
- J. Enter conduit through the sides of the junction box and not from the bottom. Place the conduit at least three inches above the floor.
- K. Place the recessed access point in a location that provides both leverage and safety.
- L. Saw cut concrete or other improved surfaces that require removal in the sidewalk area. Remove entire section of sidewalk. Replace with in-kind materials to match the existing grade.
- M. Provide 12 inches deep free draining granular backfill borrow directly under junction box.

- N. Install department approved expansion joint material around entire periphery of ring for junction boxes installed in paved surface.
- O. Record GPS coordinates for all junction boxes according to Section 13551.

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SECTION 13555M

ATMS CABINET

Add Article 1.3 paragraphs E and F:

- E. AASHTO Roadside Design Guide (current edition), Chapters 3 and 4.
- F. National Electric Code (NEC)

Delete Article 2.1 paragraph A and replace with the following:

- A. Concrete: AA(AE) required. Refer to Section 03055.

Delete Article 3.1 paragraph D and replace with the following:

- D. Field locate cabinet location with the Engineer.
 - 1. Avoid areas with poor drainage, place for minimum impact to thrown snow.
 - 2. Place for maximum accessibility and safety for maintenance personnel.
 - 3. Satisfy clear zone requirements as defined in the AASHTO Roadside Design Guide (current edition), Chapters 3 and 4.

Delete Article 3.2 paragraph C. and replace with the following:

- C. Concrete: AA(AE) required. Refer to Section 03055.

Delete Article 3.2 paragraph G and replace with the following:

- G. Extend conduit 2 inches above the floor of the cabinet foundation.

Delete Article 3.2 paragraph H and replace with the following:

- H. Conduit
 - 1. Install all conduit in base of cabinet in a 12-inch x 18-inch rectangle centered in the cabinet base.
 - 2. Refer to the Project Plans for the number, size, and orientation of all conduits entering the junction boxes.

3. Refer to AT series Standard Drawings for number and type of conduit used between the cabinet and adjacent junction boxes.
4. Above ground, use galvanized rigid steel; underground, use PVC.
5. Install bushings on the ends of all conduit prior to cable installation.
6. Provide 1 inch minimum spacing between each conduit in cabinet base. Cap conduit at both ends until used.

Delete Article 3.4 and replace with the following:

- A. Unless specified on the plans, install either a supplemental disconnect as described on AT series Standard Drawings, or an approved underground service pedestal as described in the SL series Standard Drawings and in Section 13561.
- B. Install disconnect or underground service pedestal between 10 and 15 feet from the cabinet, away from roadway. Field locate with the Engineer. Install the unit such that the door is downstream of traffic flow.
- C. Ground disconnect on ground rod located in Type I junction box at the cabinet base.
- D. Ground the transformer to the control cabinet ground terminal.
- E. Install disconnect and transformer in accordance with AT Series Standard Drawings, SL Series Standard Drawings, and the NEC.

Delete Article 3.6 paragraphs A and B and replace with the following:

- A. Refer to section 13561 for Power Service.

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SECTION 13556

CLOSED CIRCUIT TELEVISION (CCTV) ASSEMBLY

Delete Section 13556 and replace with the following:

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. All materials, labor, workmanship, equipment, testing, documentation, and incidental items required to install and test a complete and operational Freeway CCTV system as shown on plans and details.
- B. State furnished CCTV pole with foundation and anchor bolts, furnish and install junction box at the base of the pole with ground rods, ground wire, and all other incidental hardware. Includes Contractor furnished CCTV Cable, and all other conduit and junction boxes required to provide a path from the CCTV pole to the control cabinet.
- C. Furnish and install wood CCTV pole.
- D. State furnished freeway CCTV assembly with pan/tilt unit, camera control receiver, and pole-mounted cabinet.

1.2 RELATED SECTIONS

- A. Section 02892: Traffic Signal
- B. Section 03055: Portland Cement Concrete
- ~~C.~~ Section 03211: Reinforcing Steel and Welded Wire
- ~~D.~~ Section 03310: Structural Concrete
- ~~E.~~ Section 13551: General ATMS Requirements
- ~~F.~~ Section 13553: ATMS Conduit

GF. Section 13554: Polymer Concrete Junction Box

HG. Section 13555: ATMS Cabinet

HI. Section 13595: ATMS Integration

1.3 REFERENCES

A. AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals

~~B. AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals (current edition) Article 5.17: Anchor Bolts~~

C. AASHTO Standard Specifications for Highway Bridges: Division II - Construction, Section 5: Drilled Piles and Shafts

D. AASHTO Standard Specifications for Highway Bridges

E. Electronic Industries Association (EIA) Standards

F. International Municipal Signal Association (IMSA) Specifications

G. National Electric Code (NEC)

~~A. AASHTO M 31: Deformed and Plain Billet Steel Bars for Concrete Reinforcement~~

~~B. AASHTO M 111: Zinc (Hot Dipped Galvanized) Coatings on Iron and Steel Products~~

~~C. AASHTO M 270 Grade 36: Carbon and High Strength Low Alloy Structural Steel Shapes, Plates, and Bars and Quenched and Tempered Alloy Structural Steel Plates for Bridges~~

~~D. AASHTO M 284: Epoxy Coated Reinforcing Bars~~

~~E. AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Highway Bridges~~

~~F. AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals~~

~~—— G. AASHTO Division II Section 5~~

~~—— H. AASHTO's Standard Specifications for Highway Bridges~~

~~I. ASTM A 36: Standard Specification for Carbon Structural Steel~~

~~J. ASTM A 123: Standard Specification for Zinc (Hot Dip Galvanized) Coatings on Iron or Steel Products~~

~~K. — ASTM A 153: Standard Specification for Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products~~

~~L. — ASTM A 307: Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength~~

~~M. — Electronic Industries Association (EIA) Standards~~

~~N. — International Municipal Signal Association (IMSA) Specifications~~

~~O. — National Electric Code (NEC)~~

1.4 SUBMITTALS

- A. Provide all of the following submittals as described in Section 13551:
 - 1. Contractor Furnished Material and Equipment Lists
 - 2. Test Reports for the Cable & Conductor Test, the Local Field Operations Test, and the Thirty-Day Burn-In Test
 - 3. Completion Notice
 - 4. Manufacturer's Equipment Documentation
 - 5. As-Built Drawings

PART 2 PRODUCTS

2.1 CCTV POLE OR LUMINAIRE

- A. Wood Pole Mounted CCTV: provide class 5 or 6 Douglas Fir wood pole, treated with Chromated Copper Arsenate CCA Type C, 33 ft nominal length and not less than 5½ inches diameter at top.
- B. Steel Pole Mounted CCTV: steel pole with anchor bolts provided by the Department. ~~Refer to ASTM A 36.~~
 - ~~1. Anchor bolts: conform to AASHTO M 270 Grade 36.~~
 - ~~2. Nuts, washers, and anchor bolts: galvanized according to ASTM A 153 and ASTM A 123.~~
- ~~C. Luminaire Mast Arm Mounted CCTV: provide luminaire extension per Section 02892 and SL series Standard Drawings.~~

2.2 CCTV STEEL POLE FOUNDATION

- A. Class AA(AE) concrete. See Section 03055 and Section 03310.

~~B. Reinforcing Steel: Coated steel (Refer to Section 03211).~~

~~B. Reinforcing Steel~~

~~1. Coated~~

~~2. AASHTO M 284 or M 111~~

~~3. AASHTO M 31 Grade 400~~

- C. Non-Shrink Grout

2.3 JUNCTION BOX

- A. Refer to Section 13554.

2.4 CCTV ASSEMBLY

- A. Department furnished:
1. Camera assembly, including camera, pan/tilt unit, control receiver, environmental enclosure, and cabling.
 2. ~~Type G pole mount cabinet.~~

2.5 MOUNTING EQUIPMENT

- A. Provide clamp kit, mounting hardware, pipe, shims, grommet, and all additional equipment to attach CCTV assembly to pole or mast arm.
- B. Provide all stainless steel or hot-dipped galvanized fasteners and hardware unless otherwise approved. Provide copper pole grounding lug.

2.6 DATA SURGE SUPPRESSOR

- ~~A. Surge suppression: State furnished IPS-RDPE Unit.~~
- ~~A. General characteristics (typical):~~
- ~~1. Typical application: RS-422.~~
 - ~~2. Surge: 36 kA.~~
 - ~~3. Turn-on at 10 mA: +2.8/-0.6 V dc.~~
 - ~~4. Resistance: 1 Ohm.~~
 - ~~5. Capacitance: 30 pF.~~
 - ~~6. Energy: 310 ft lbs~~
 - ~~7. Let-through: less than +10/-1 Vp (peak open circuit voltage at max current).~~
 - ~~8. 3dB (600 Ohms) BW: 95Mhz~~
 - ~~9. Temperature: 40 degrees F to 185 degrees F Storage/Operating 122 degrees F.~~

2.7 CCTV CABLE

- A. Provide type composite CCTV cable to meet or exceed the following requirements:
1. Outer Jacket
 - a. Type 4E
 - b. Type CMG CMR C
 - c. UL listed
 - d. JKT Riser

2. Data

- a. 2 stranded conductors
- b. 18 AWG
- c. 0.10 inch PVC jacket thickness

3. Power

- a. 3 stranded conductors
- b. 12 AWG
- c. 0.12 inch PVC jacket thickness

4. Video

- a. 1-RG59 coaxial cable
- b. 95 percent Braid Coverage
- c. O/A 0.03 inch PVC

~~2.7 VIDEO SURGE SUPPRESSOR~~

~~A. General characteristics (typical):~~

- ~~1. Typical application: VLF/HF receive only, LAN, closed circuit video.~~
- ~~2. Surge: 18 kA IEC 1000-4-5 8/20 ms waveform 80 ft-lbs.~~
- ~~3. Turn-on Time: 4 ns for 2 kV/ns.~~
- ~~4. VSWR: less than or equal to 1.1 to 1 over frequency range.~~
- ~~5. Insertion Loss: less than or equal to 0.3 dB over frequency range.~~
- ~~6. User Current: 2.0A dc continuous.~~
- ~~7. Vibration: 1G up to 100Hz.~~
- ~~8. Temperature: 50 degrees F to 185 degrees F Storage/Operating
113 degrees F.~~

PART 3 EXECUTION

3.1 INSTALLATION

- A. Load, transport, and install all state-furnished materials per the manufacturer's instructions and as shown in the plans.
- B. Provide foundation, junction boxes, ground rod, grounding lug, conduit, stainless steel mounting bands, wood pole, and all additional equipment required for a complete and operational CCTV system.
- C. Install all wiring, conduit, and junction boxes as shown on site plans and details.
 - 1. Field locate all conduits per Section 13553 and junction boxes to avoid drainage areas and steep slopes whenever possible.
 - 2. Protect existing conductors while installing camera cables and conductors.

- D. Connect the controller and all wires as specified by the manufacturer.
- E. Furnish and install all incidental items, such as wire nuts, grommets, tape connectors, and electrical nuts, necessary to make the CCTV system complete.
- F. After installation, the exterior of all equipment must be free of all loose rust and mill scale, dirt, oil, grease and other foreign substances.

3.2 STEEL CCTV POLE FOUNDATION

- A. All material and workmanship conforms to AASHTO's Standard Specifications for Highway Bridges.
- B. Verify that the installation of the CCTV camera, pole, pole mount cabinet, junction boxes, and foundation in the location marked in the field has no conflict with existing utilities, underground and overhead. Comply with all utility and blue stake requirements.
- C. Excavation
 - 1. Refer to Section 13551.
- D. Construct Caissons to conform to AASHTO Standard Specifications for Highway Bridges: Division II - Construction, Section 5: Drilled Piles and Shafts~~AASHTO Division II Section 5, Drilled Piles and Shafts~~. Drill caissons into either native soil or compacted fill.
 - 1. If formwork is required during drilling, the forms may be withdrawn during concrete placement.
 - 2. Cast the top of the caisson against the formwork for appearance.
- E. Place concrete directly into the excavation. Use minimum forming.
- F. Do not weld reinforcing steel, conduit, or anchor bolts; tie reinforcing steel and conduit securely in place.
- G. Install Reinforcing Steel according to Section 03211.
- ~~G. Coat all reinforcing steel to conform to AASHTO M 284 or M 111 and AASHTO M 31 Grade 420, respectively. Coat the ends of cut reinforcing with approved coating.~~
- H. All cast-in-place concrete will be class AA(AE) except where specified otherwise. Cap all conduits before placing concrete.
- I. After pole is installed, place non-shrink grout between base plate and foundation surface.

- J. Install weep hole in foundation per SL series Standard Drawings.

3.3 ANCHOR BOLTS

- A. Install anchor bolts in accordance with AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals (current edition) Article 5.17: Anchor Bolts.
~~A. Refer to ASTM A 307 and Section 13551.~~

3.4 STEEL CCTV POLE

- A. Install the metal camera poles on concrete bases as described herein. Apply rust, corrosion, and anti-seize protection at all threaded assemblies by coating the mating surfaces with an approved compound. Refer to AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Highway Bridges, as well as AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.
- B. Install pole such that the hand hole is facing away from traffic.
- C. Install ground rod. NEC 250.1.
- D. All fasteners and attachment hardware for bands and other equipment: stainless steel.
- E. Furnish and install all incidental items, such as wire nuts, grommets, tape connectors, electrical nuts, etc., necessary to make the CCTV system complete.
- F. Adjusting the anchor bolt nuts, plumb all steel poles to the vertical with all camera equipment installed.

- G. Pole Mount Cabinet
 - 1. The Department rejects poles that are damaged by improper drilling of holes.
 - 2. Drill and nipple holes at each site.
 - 3. Touch-up by hot stick method.

3.5 WOOD CCTV POLE

- A. Install wood pole below grade to a minimum depth equal to one-sixth the total pole height. Refer to AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.
- B. Increase the installation depth by one times the diameter of the pole when wood pole is installed on a slope of 2:1 or greater. Measure depth from the down-slope side of the pole.
- C. Backfill with native material in 1 foot lifts to match surrounding grade. Tamp each lift to 90 percent compaction.

3.6 CCTV ASSEMBLY

- A. Assemble the camera assembly and prepare for installation per the manufacturer's instructions prior to delivery to the job site.
- B. Deliver the assemblies to the job site as complete units, and install as per the plan details.

3.7 CCTV CABLES

- A. Install camera cables in conduit and poles. All cable runs must be continuous and must run without splices between the camera and the cabinet.
- B. Keep cable ends sealed at all times during installation using an approved cable end cap. Keep cable end sealed until connectors are installed.
- C. Do not violate the minimum bending radius and the maximum pulling tension recommended by the manufacturer's specifications at any time.
- D. Provide 6 ft of cable slack in all cabinets. Refer to Section 13555.
- E. Make all camera cable connections between the CCTV assembly, RS-422/RS-232 converter, and communications equipment, as required to provide a fully operational CCTV system.

3.8 CONDUCTORS

- A. Dome CCTV: furnish and install 3-#12 stranded IMSA Spec 20-1 power conductor cables between the 24 VAC transformer in the cabinet and the cabinet assembly on the luminaire arm.
- B. Freeway CCTV: furnish and install 3-#6 from camera assembly to cabinet.
- C. Freeway CCTV with Pole Mounted Cabinet: furnish and install 3-#12 from camera assembly to cabinet.
- D. Splices: not allowed between camera and cabinet.

3.9 POLE-MOUNTED CABINET

- A. Install cabinet such that cables enter the underside of the cabinet.
- B. Arrange all equipment installed in the cabinet in a neat and orderly fashion on shelf. Refer to Section 13555.
- C. Install pole mounted cabinet such that it faces away from traffic. Use stainless steel bands.

3.10 JUNCTION BOX

- A. Refer to Section 13554.

3.11 TESTING AND ACCEPTANCE

- A. Successfully complete the following tests:
1. Cable and Conductor Test: Refer to Section 13551.
 2. Local Field Operations Test: Use the Closed Circuit Television (CCTV) Local Field Operations Test form Instruction. Obtain UDOT's newest version of the form from the UDOT Web site. Refer to <http://www.udot.utah.gov/index.php/m=c/tid=719>.
 - a. Conduct the test after the Cable and Conductor test has been successfully completed and the Cable and Conductor Test Report has been approved by the Engineer.
 - b. Furnish all equipment, material, and labor necessary for the test.
 3. Acceptance Tests: Refer to Section 13595.

END OF SECTION

**Supplemental Specification
2005 Standard Specification Book**

SECTION 13557M

VARIABLE MESSAGE SIGN

Delete Article 1.1 paragraph B and replace with the following:

- B. Furnish, install, and test VMS tubular support structures, VMS sign assembly, sign connection hardware, catwalk, cabinet foundation, communications cable and any additional equipment required. Install state furnished ATMS cabinet. Furnish all incidental items required to provide a complete cable connection between VMS controllers as shown in the details and specifications. Test the installed VMS and adjust the viewing angle as required.

Delete Article 1.2 and replace with the following:

1.2 RELATED SECTIONS

- A. Section 01554: Traffic Control
- B. Section 02466: Drilled Caisson
- C. Section 02841: W-Beam Guardrail
- D. Section 02843: Crash Cushions
- E. Section 02844: Concrete Barrier
- F. Section 03055: Portland Cement Concrete
- G. Section 03152: Concrete Joint Control
- H. Section 03211: Reinforcing Steel and Welded Wire
- I. Section 03310: Structural Concrete
- J. Section 05120: Structural Steel
- K. Section 13551: General ATMS Requirements

- L. Section 13554: Polymer Concrete Junction Box
- M. Section 13555: ATMS Cabinet
- N. Section 13595: ATMS Integration

Delete Article 1.3 and replace with the following:

1.3 REFERENCES

- A. AASHTO M 111: Zinc (Hot-dip Galvanized) Coatings on Iron and Steel Products
- B. AASHTO M 232: Zinc (Hot-dip Galvanized) on Iron and Steel Hardware
- C. AASHTO M 270: Carbon and High-Strength Low-Alloy Structural Steel Shapes, Plates, and Bars and Quenched and Tempered Alloy Structural Steel Plates for Bridges
- D. AASHTO M 293: Hardened Steel Washers
- E. AASHTO Standard Specifications for Highway Bridges
- F. AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals
- G. ASTM A 36: Carbon Structured Steel
- H. ASTM A 53: Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
- I. ASTM A 307: Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
- J. ASTM A 325: Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
- K. ASTM A 563: Carbon and Alloy Steel Nuts
- L. ASTM F 593: Stainless Steel Bolts, Hex Cap Screws, and Studs
- M. ANSI/AASHTO/AWS D1.5: Welding Specifications

Delete Article 2.1 and replace with the following:

2.1 VMS FOUNDATIONS

- A. Concrete: Class AA(AE) required. Refer to Sections 03055 and 03310.
- B. Reinforcing Steel: Coated Steel: Refer to Section 03211
- C. Anchor Bolts:
 - 1. Conform to AASHTO M 270 Grade 36 and ASTM A 307 Specifications.
 - 2. Thread and galvanize the upper 12-inch: free running nuts, by hand, for the entire length of the threads.
 - 3. Galvanize the upper 14 inches of the anchor bolts, all nuts and washers, in accordance with the requirements of AASHTO M 232.
 - 4. Hook dimension of 8 inch as shown in Standard Plans.
 - 5. Do not weld anchor bolts to reinforcing steel.
 - 6. Nuts: Conform to ASTM A 563 Specifications.
 - 7. Washers: Conform to AASHTO M 293-93 Specifications.

Delete Article 2.4 paragraph B item 4 and replace with the following:

- 4. Washers: Conform to AASHTO M 293-93 Specifications. Lock washer: all bolts.

Delete Article 2.4 paragraph C item 5 and replace with the following:

- 5. Washers: Conform to AASHTO M 293-93 Specifications. Lock washer: all bolts.

Add Article 3.1 paragraph H:

- 1. Construct VMS to conform to current editions of AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals and AASHTO Standard Specifications for Highway Bridges.

Delete Article 3.4 paragraph A item 3 and replace with the following:

- 3. Rake post as necessary during sign erection using leveling nuts to level the sign panels. At final position wrench tighten both top and bottom anchor bolt nuts against the base plate. Obtain all bolt torque values from the design or the Engineer.

Delete Article 3.4 paragraph B and replace with the following:

- B. All Other Structural Steel:
 - 1. Use one sign-mounting bracket at each sign Z bracket. See sign fabricator's drawings for number and location of Z brackets.
 - 2. Pre-tension steel rod to 11,000 lbs.
 - 3. Sign placement on horizontal member may be adjusted up to 3/8 inches upward for VMS platform to match catwalk elevation.
 - 4. Refer to ASTM A 36: Standard Specification for Carbon Structural Steel, and AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.

Delete Article 3.5 and replace with the following:

3.5 VMS CABINET

- A. Install ATMS cabinet according to section 13555.

**Supplemental Specification
2005 Standard Specification Book**

SECTION 13561M

ATMS POWER SERVICE

Add the following to Part 2, Article 2.1:

- K. Use copper conductor with RHH-USE-RHW rated insulation for all underground and riser electrical conductors.

Delete Articles 3.1 paragraphs E through G and replace with the following:

- E. Ground all electrical equipment, including cabinets in accordance with the NEC requirements. Hard draw all ground wires.
- F. Supply all conduit and conductors to power source connection location. Final connection is to be made by the power company.

Delete Article 3.2 paragraph A and replace with the following:

- A. Contact the Engineer a minimum of 6 weeks prior to power service hookup.

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**Supplemental Specification
2005 Standard Specification Book**

SECTION 13594M

FIBER OPTIC COMMUNICATION

Delete Article 2.3 paragraph A and replace with the following:

- A. With the following characteristics and as specified on the plans:
 - 1. LC (standard)
 - a. Factory installed or field installed LC or LC compatible connectors.
 - b. Ceramic ferrules.
 - c. Maximum insertion loss: 0.30 dB.
 - d. Connector back reflection: greater than 35 dB.
 - 2. ST (to be used only where approved)
 - a. Factory installed or field installed ST or ST compatible connectors.
 - b. Ceramic ferrules and metallic connector bodies.
 - c. Maximum insertion loss: 0.30 dB.
 - d. Connector back reflection: greater than 35 dB.

Delete Article 2.3 paragraph C and replace with the following:

- C. Furnish and install new fan-out kits to replace any existing fan-out kits that must be severed in order to make fiber terminations.

Delete Article 2.4 and replace with the following:

- A. Provide splice enclosures with the following minimum characteristics:
 - 1. Comply with Telcordia GR-771
 - 2. Pass Bellcore Testing Requirements
 - 3. Corrosion resistant shell
 - 4. Allow re-entry without replacing the cable seals
 - 5. One 3-section end plate with 6 pre-molded cable entry ports
 - 6. One blank end plate
 - 7. Hinged splice trays to provide easy access to splices on other trays
 - 8. Strength member tie-off
 - 9. Mechanism to resist cable pull-out
 - 10. All required accessories to complete the splice

- B. Type A:
 - 1. Accommodates up to 288 splices
 - 2. Contains 2 or more 36-count splice trays
- C. Type B: For locations with up to 48 splices.
 - 1. Accommodates up to 48 splices
 - 2. Contains 2 or more 12-count splice trays

Standards Committee Submittal Sheet

Name of preparer: Barry Axelrod

Title/Position of preparer: Technical Writer

Specification/Drawing/Item Title: Standards Committee Policy - 08A5-1

Specification/Drawing Number: N/A

Enter appropriate priority level: **Enter appropriate priority level:**
(See last page for explanation) N/A (See last page for explanation)

Sheet not required on editorial or minor changes to standards. Check with Standards Section.

NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page. (<http://www.udot.utah.gov/index.php/m=c/tid=303>)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.
- FHWA procedure being modified to comply with previously agreed upon approval procedures.
- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

N/A

C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site, Members page at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)

N/A

ACEC Comments: (Use as much space as necessary.)

N/A

D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

Note: There is a two-week response time set for this item. Allow Stakeholders two weeks to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

N/A

E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

N/A

F. Costs? (Estimates are acceptable.)

1. Additional costs to average bid item price.

N/A

2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).

N/A

3. Life cycle cost.

N/A

G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.)
(Estimates are acceptable.)

Better coordination and implementation of changes.

H. Safety Impacts?

N/A

I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

Policy previously approved in April 2005 for changes in the FHWA procedure. Further clarification was needed based on FHWA comments on the final approval process.

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

Priority 1 Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised.

Priority 2 Upon posting, this impacts projects being advertised.

Priority 3 Upon posting, the approved standard takes effect **four weeks** later for projects being advertised.

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Standards Committee

Effective: June 30, 1967

UDOT 08A5-1

Revised: August 25, 2005

Purpose

To establish the procedure and place responsibility for the development, revision, and preparation of standard drawings, specifications, and related policies and procedures, and for their review, approval, printing, and distribution.

Policy

The Standards Committee reviews and approves all standard drawings, specifications, supplemental specifications, and related policies and procedures prior to implementation. The Committee also considers relevant matters presented to it by interested units or individuals, formulating appropriate action within its scope of responsibility.

The Standards Committee is composed of eight permanent members, with the Project Development Engineer as chairperson and the Standards and Specifications Engineer serving as secretary. Membership, representing the offices, divisions, sections, or units as indicated, is as follows:

Members

Director, Project Development

Region Director (Appointed by the Deputy Director)

Director, Engineering Services

Director, Construction and Materials

Engineer for Materials

Engineer for Maintenance

Engineer for Traffic & Safety

State Bridge Engineer

Advisory Members

Federal Highway Administration (FHWA)

Associated General Contractors (AGC)

American Council of Engineering Companies, Utah Branch (ACEC)

Members should appoint a substitute when the member is unable to attend a meeting. The substitute assumes full authority to bind the represented division to a decision by vote or other action in matters pertaining to the Standards Committee. Qualified individuals will continually fill all positions.

Temporary advisory members may be selected by the Committee to advise and assist when specialized talents are needed. Advisory members do not have the power to vote. However, FHWA approval is required for all standard drawings, standard specifications, and supplemental specifications, where Federal participation is anticipated. **This approval is provided in a letter from FHWA presented to the Standards Committee at the scheduled meeting time in accordance with procedure 08A5-1.3.**

Robert's Rules of Order will generally be followed, and in matters not provided for or not applicable, the Committee may formulate its own rules of procedure. Five members are required to constitute a quorum. As a matter of rule, items presented at a regularly scheduled meeting can be approved at that meeting if Attachment 1 has been completed in sufficient detail for the Committee to make an approval decision. Items presented at special meetings will be handled on a case-by-case basis.

Meetings are normally scheduled for the last Thursday, every other month, starting at 8:00 a.m., for four hours. The chairman may call or cancel a meeting, depending upon the quantity and urgency of the business at hand. Three or more of the permanent members may also call meetings.

The Deputy Director has final approval authority of actions of the Standards Committee.

The Deputy Director approves all membership changes.

Definitions

Sponsor

An individual or task force (appointed by the Chairman of the Standards Committee) presenting an item to the Standards Committee. The sponsor should be a member of the Standards Committee or be in contact with a Committee member who is familiar with the subject matter contained in the document.

Technical Staff Support

That support provided by the Standards and Specifications Section to the sponsor identifying the need for a new or revised document. Works closely with the sponsor or with a task force in the actual preparation of draft or final documents, including supporting documentation.

That support provided by the Standards and Specifications Section to take actions related to meeting minutes and agenda.

Draft Document

Document prepared for review by the Standards Committee and conforming to specified guidelines.

Final Document

Documents prepared from approved drafts for final review and approval by the Standards Committee and conforming to specified guidelines.

Procedures

Preparation and Approval of Documents by the Standards Committee UDOT 08A5-1.1

Responsibility: Sponsor

Actions

1. Determine need to develop new or revised standard drawings or specifications or the need to present information of interest to the Committee.

Responsibility: Sponsor (with assistance from the Standards & Specifications Section)

2. Prepare draft of new or revised specifications, standard drawings, or general information as specified below.
 - (a) Specifications, Supplemental Specifications. In the case of a revised document, prepare the draft with the “**MS Word Track Changes**” option turned on.
 - (b) Standard Drawings. Prepare the draft.
 - (c) General Information. Prepare the draft in a format suitable for the information.
3. Complete all Submittal Sheet Requirements
 - (a) Allow all Stakeholders a two-week response time to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.
 - (b) Complete Procedure 08A5-1.4, Stakeholder Notification and return to the next step on completion of Procedure 08A5-1.4 or after 14 calendar days if no comments are received.
4. Submit all pertinent information including a completed attachment 1, specifications, or drawings to the Standards & Specifications Section at least fourteen working days before a regularly scheduled Standards Committee meeting. Refer to the Standards Committee Web site at <http://www.udot.utah.gov/index.php/m=c/tid=303> for meeting dates and deadlines. Include all electronic files were possible.

Responsibility: Standards & Specifications Section

5. Review related documents and make any changes that may be required as a result of the draft of new or revised standard drawings, specifications, or information.
6. Prepare the agenda in accordance with UDOT procedure 08A5-1.2.
7. Publish the entire package to the Standards Committee Web site and send out email notice of publication in accordance with UDOT procedure 08A5-1.2.

Responsibility: Standards Committee Members

8. Review the agenda with attachments prior to the Committee meeting.

Responsibility: Sponsor/Presenter

9. Present the draft of new or revised standard drawings, specifications, or general information with supporting documentation and explanation to the Standards Committee.

Responsibility: Standards Committee

10. Take one of the following actions:
 - (a) Discuss the standard drawing, specification, or information as presented. Approve the item as presented, or.
 - (b) Discuss the standard drawing, specification, or information as presented. Approve the item with changes, or
 - (c) Refer the standard drawing, specification, or information back to the Sponsor so that the Sponsor can make required changes before bringing the item back to the Committee, or
 - (d) Reject/defer the standard drawing, specification, or information.

Responsibility: Sponsor and Standards & Specifications Section

11. When either step 10 (a) or 10 (b) is taken, prepare the final copy of the standard drawing, specification, or information as required and as specified below.
 - (a) Specifications, Supplemental Specifications. Remove all markings made in accordance with item 2A above. Place the effective date of the change on the document. The effective date is the approval date (meeting date) unless the Committee approves a future date. Make any approved or editorial changes in accordance with Step 13.

- (b) Standard Drawings. Make any approved or editorial changes in accordance with Step 13. On the final drawing(s), place the approval date in both “Recommended for Approval” and “Approved” date lines. The dates are the date that Standards Committee approves the drawing. Complete the “Revisions” section.
 - (c) General Information. Prepare the final copy in a format suitable for the information. Make any approved or editorial changes in accordance with step 13.
- 12. When step 9(c) is taken, make the necessary changes and go back through steps 2 through 11.

Responsibility: Sponsor

- 13. Make the editorial changes to an approved item and send electronic files to the Standards & Specifications Section within **five** working days from the date of the meeting. If approved with no changes, check with the Standards Section to make sure they have all needed files.

Responsibility: Standards & Specifications Section

- 14. For approved standard specifications, supplemental specifications or standard drawings complete step 16 of UDOT procedure 08A5-1.2.

Preparation of Minutes and Distribution of Minutes and Approved Items UDOT 08A5-1.2

Responsibility: Standards and Specifications Section

Actions

1. Attend Standards Committee meeting and as required, gather information needed to transcribe meeting minutes.
2. Following the meeting, prepare a draft of the minutes for review by the Committee Secretary.

Responsibility: Standards Committee Secretary

3. Review and edit the draft of the meeting minutes.

Responsibility: Standards and Specifications Section

4. Gather information needed to prepare agenda for the next meeting.
5. Make required changes to the meeting minutes.
6. Update the agenda section of the minutes.
7. Review all submitted files and information.
8. Create PDF files of submitted items and compile into one PDF file package.
9. Publish the agenda package to the Standards Committee Web site at least ten working days prior to the next regularly scheduled meeting.
10. Send an e-mail to the “Standards Committee Issues” group advising them that the agenda package has been published to the Standards Committee Web site.
11. Make and distribute hard copies of the package to the Chairman and the Standards Section.

Responsibility: Standards Committee

12. Approve with or without modifications, the minutes of the previous meeting.
13. Take action on agenda items in accordance with UDOT procedure 08A5-1.1.

Responsibility: Standards and Specifications Section

14. Make any required changes to the meeting minutes.
15. File the minutes as required.
16. Publish all changes within ten working days from the last Standards Committee meeting.

Approval By FHWA

UDOT 08A5-1.3

Responsibility: Standards and Specifications Section

Actions

1. Notify FHWA in accordance with 08A5-1.2, Step 10 that the minutes agenda package has been published to the Standards Committee Web site.

Responsibility: FHWA

2. Distribute the agenda package downloaded from the Standards Committee Web site within the FHWA Division Office for review and comment as appropriate.
3. **Complete an approval letter to be presented at the Standards Committee meeting. Provide the letter prior to the meeting to the Standards Committee Chairperson and Secretary if attendance by FHWA at the meeting is not possible.**
4. **Provide an electronic copy of the approval letter by e-mail to the Standards Committee Chairperson and Secretary.**
5. Provide comments during the regularly scheduled Standards Committee meeting.

Responsibility: Standards and Specifications Section and Standards Committee

6. Complete UDOT 08A5-1.1, Step 10 to discuss FHWA comments
7. Complete remaining procedural steps for approved items beginning at UDOT 08A5-1.1, Step 11.

Responsibility: Sponsor

Actions

1. Send a copy of the proposed Standard Specification, Supplemental Specification or Standard Drawing and Submittal Sheet by email to the AGC and ACEC Standards Committee representative. If no Submittal Sheet is available provide a memo that outlines the change and the reason for the change.
2. Refer to the Standards Committee Web site, Members page at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.
3. Coordinate with all additional stakeholders in accordance with the Submittal Sheet.

Responsibility: AGC/ACEC Committee Member

4. Select at least two AGC or ACEC members each from respective membership to review and comment on the proposed change.
5. Provide comments by return e-mail within 14 calendar days to the Sponsor.

Responsibility: Stakeholders

6. Review and comment on the proposed change.
7. Provide comments by return e-mail within 14 calendar days to the Sponsor.

Responsibility: Sponsor

8. Return to Procedure 08A5-1, step 4 and continue the process.

Attachment 1 - Standards Committee Submittal Sheet

Standards Committee Submittal Sheet

Name of preparer: _____
Title/Position of preparer: _____
Specification/Drawing/Item Title: _____
Specification/Drawing Number: _____

Enter appropriate priority level:

(See last page for explanation) _____

Sheet not required on editorial or minor changes to standards. Check with Standards Section.

NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page.
(<http://www.udot.utah.gov/index.php/m=c/tid=303>)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.
- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site, Members page at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)

ACEC Comments: (Use as much space as necessary.)

D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

Note: There is a two-week response time set for this item. Allow Stakeholders two weeks to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

Construction Engineers

Contractors (Any additional contacts beyond "C" above.)

Suppliers

Consultants (as required) (Any additional contacts beyond “C” above.)

Others (as appropriate)

- E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)
- F. Costs? (Estimates are acceptable.)
 - 1. Additional costs to average bid item price.
 - 2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).
 - 3. Life cycle cost.
- G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.) (Estimates are acceptable.)
- H. Safety Impacts?
- I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

- | | |
|------------|---|
| Priority 1 | Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised. |
| Priority 2 | Upon posting, this impacts projects being advertised. |
| Priority 3 | Upon posting, the approved standard takes effect four weeks later for projects being advertised. |

Standards Committee Submittal Sheet

Name of preparer: Larry Montoya

Title/Position of preparer: Traffic and Safety Design Engineer

Specification/Drawing/Item Title: Highway Luminaire Pole Ground Mount

Specification/Drawing Number: SL 14 & SL 15

Enter appropriate priority level:

(See last page for explanation) 3

NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page.
(<http://www.udot.utah.gov/index.php/m=c/tid=303>)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

This revision is required to address two issues:

1. *Clarify the anchor bolt circle requirements for fixed base and slip base luminaire poles. – The current base detail has caused some confusion and errors to occur during construction. This detail called out a 13” diameter bolt circle. This is only for the fixed base luminaire poles. The slip base poles require a 16” diameter anchor bolt circle (as called out on SL15). This note has caused a number of foundations to be re-poured.*

To help simplify these details, the submitted drawings correct this problem by changing both anchor bolt circle diameters on Section A-A to a 16” diameter. We also identify the base plate detail as the “Fixed Base Plate Detail” and reference the Slip Base details on SL15.

2. *Identify grading requirement for slip base luminaire poles – A note was added to the Slip Base luminaire detail regarding foundation height and references SN12B for grading requirements.*

- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

Anticipate no increase in cost for either clarification. This modification will save additional project cost and delays due to foundation replacement.

- C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Refer to the Standards Committee Web site > Standards Committee Members at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)
Did not submit.

ACEC Comments: (Use as much space as necessary.)
Did not submit.

- D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

Acceptable to FHWA, and Traffic and Safety Operations Engineer, John Leonard.

Construction Engineers

Contractors (Any additional contacts beyond "C" above.)

Suppliers

Consultants (as required) (Any additional contacts beyond "C" above.)

Others (as appropriate)

- E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

None

F. Costs? (Estimates are acceptable.)

1. Additional costs to average bid item price.

No additional cost.

2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).

No additional cost.

3. Life cycle cost.

N/A

G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.)
(Estimates are acceptable.)

H. Safety Impacts?

The grading clarification will ensure the foundations are constructed per recognized standards so in the event of a hit the luminaire pole will shear properly and not snag the errant vehicle.

I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

This is already an acceptable and required option as noted.

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

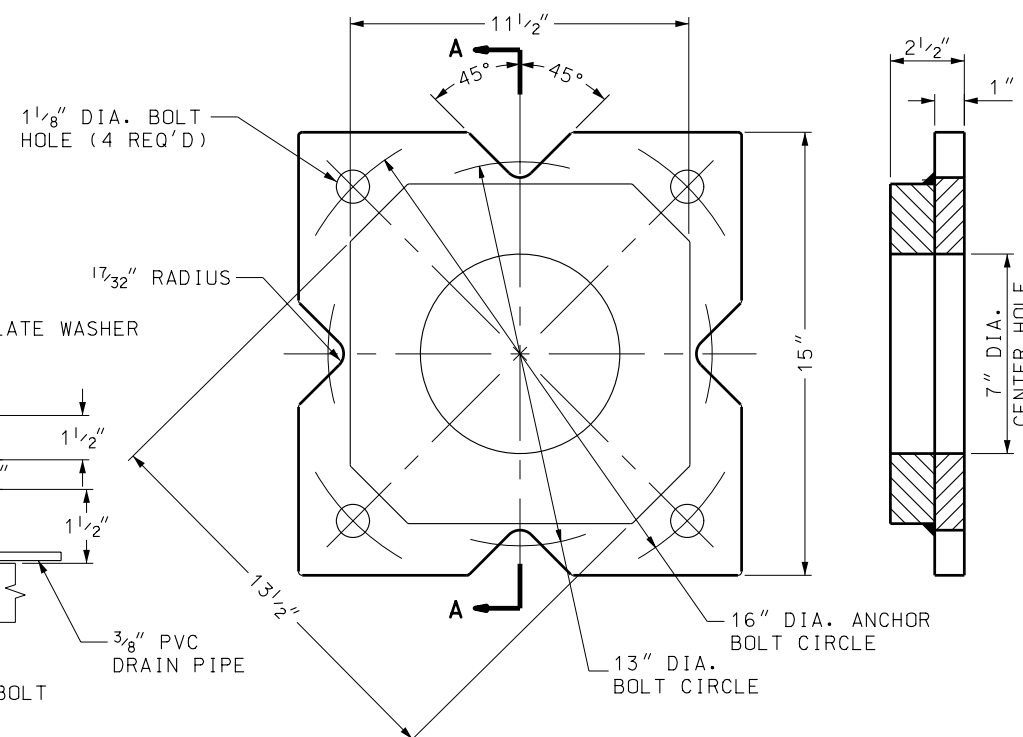
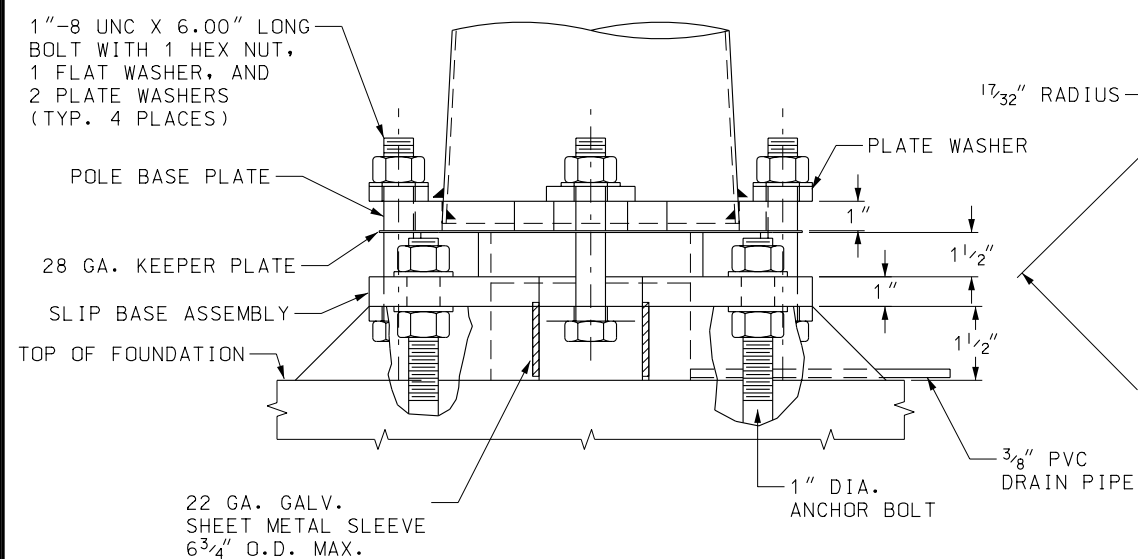
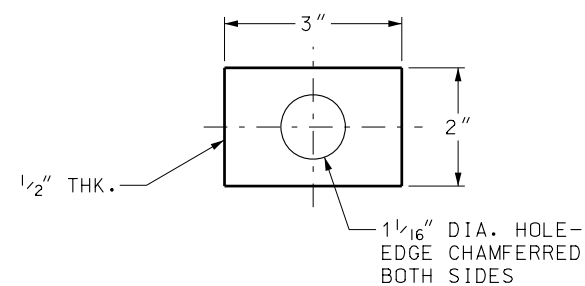
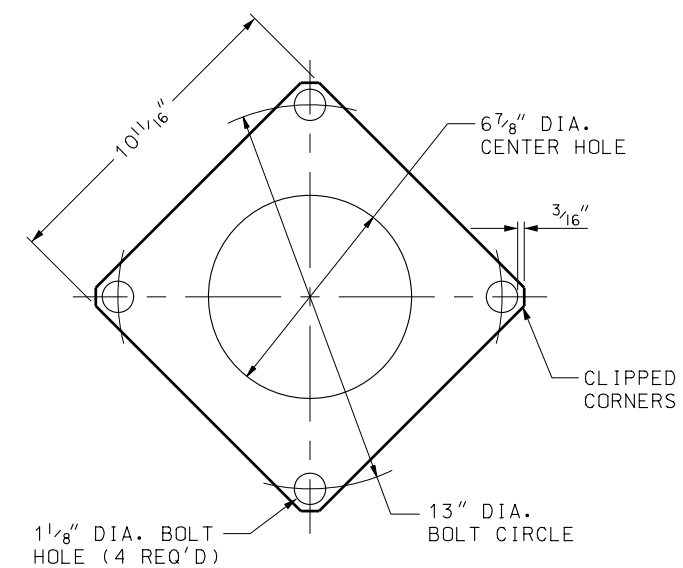
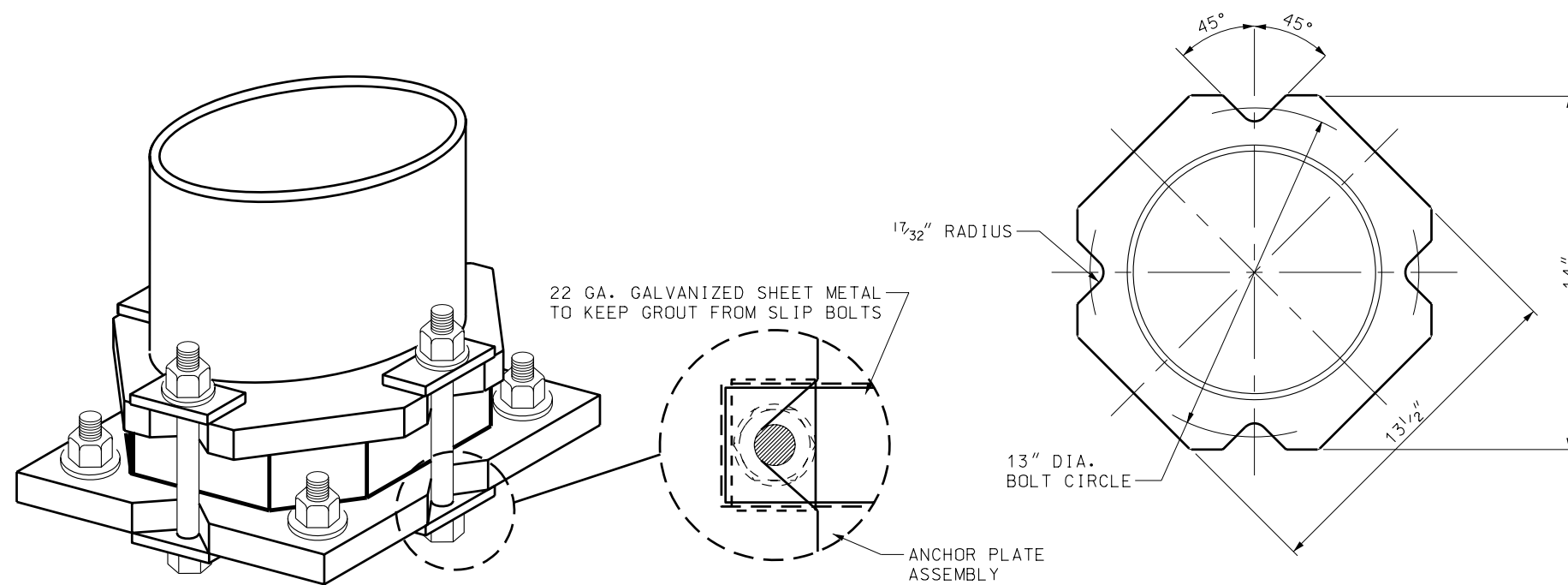
Priority 1 Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised.

Priority 2 Upon posting, this impacts projects being advertised.

Priority 3 Upon posting, the approved standard takes effect **four weeks** later for projects being advertised.

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SECTION A - A

- NOTES:

1. PLACE ANCHOR PLATE ASSEMBLY ON ANCHOR BOLT LEVELING NUTS AND SECURE IN PLACE.
2. ERECT LIGHT POLE AND SECURE WITH 1 INCH DIA. HIGH STRENGTH BOLTS. INSTALL BOLTS IN THE SLOTS SO THE BOLT SHANKS ARE IN CONTACT WITH THE LIGHT POLE PLATE AND ANCHOR PLATE ASSEMBLY.
3. ALL STEEL MATERIALS INCLUDING ANCHOR BOLT THREADS ARE HOT-DIPPED GALVANIZED. AVOID DAMAGING THE GALVANIZED FINISH OF MATERIALS DURING TRANSPORT AND PLACEMENT.
4. TORQUE ALL SLIP BOLTS TO 80 FT LBS, RELEASE AND RETORQUE TO 70 FT LBS.
5. INSTALL DRY PACK GROUT AFTER LIGHT POLE IS PLACED IN FINAL POSITION.

REVISONS					
1	8-25-05	LJM	UPDATED SLIP BASE ASSEMBLY DETAIL.		
ID.	DATE	APPR.			REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

~~CIVIL DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION~~

RECOMMENDED FOR APPROVAL	AUG.25,2005
CHAIRMAN STANDARDS COMMITTEE APPROVED	DATE AUG.25,2005

STANDARD DRAWING TITLE

STD DWG
SL 15

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Standards Committee Submittal Sheet

Name of preparer: Glenn Schulte
Title/Position of preparer: Safety Specialist
Specification/Drawing/Item Title: CC 7B Crash Cushion Type "F" BEAT-SSCC
Specification/Drawing Number: CC 7B
Date Process Started: _____ Date Process Completed: _____
Status: ☒ Approved ☐ Disapproved ☐ Sent Back For Review

Enter appropriate priority level: 3 Outdated submittal sheet used. As a result required information missing and coordination time not two weeks.
(See last page for explanation) _____

Sheet not required on editorial or minor changes to standards. Check with Standards Section.
NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page.
(<http://www.udot.utah.gov/index.php/m=c/tid=303>)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

This system was given conditional approval and is listed in the Guidelines for Crash Cushions and Barrier End Treatments dated March 1, 2005.

This is a second system for this type and will foster competition between the systems. A drawing was needed to achieve the, grading and installation of the system.

- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

NO change.

- C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below.

Indicate if no comments were received.

Refer to the Standards Committee Web site, Members page at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.) Contacted Monte Wilson
As of 8/8/2005 no comments received.

ACEC Comments: (Use as much space as necessary.) Contacted Tyler Yorgensen,
comments received and addressed.

- D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

Comment period still underway when submittal sheet prepared.

Construction Engineers:

Maintenance Engineers:

R-2, Betty Purdie no comments

R-4, Hugh Kirkham, had an editorial change

Preconstruction Engineers: no responses

Traffic Engineers: R-3, Doug Bassett no comments

Contractors: contact done through AGC

Suppliers: Supplier, John Durkos, reviewed drawing and made a couple of technical changes

Consultants (as required): contact done through ACEC

Others (as appropriate)

- E. Costs? (Estimates are acceptable.)

1. Additional costs to average bid item price. No cost difference should be incurred.
2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).

When this system is installed using the ground-mounted option it should be substantially cheaper than a system that requires a concrete pad.

- 3. Life cycle cost.
Based on literature from the manufacture this system will be substantially less expensive to maintain due to the fact it uses some standard box beam barrier parts. Although the box beam barrier system is not widely used in Utah this system is designed to meet a need for the protection of the ends of concrete barrier.
- F. Safety Impacts? No effect
- G. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

Other Business relating to W-beam Guardrail:

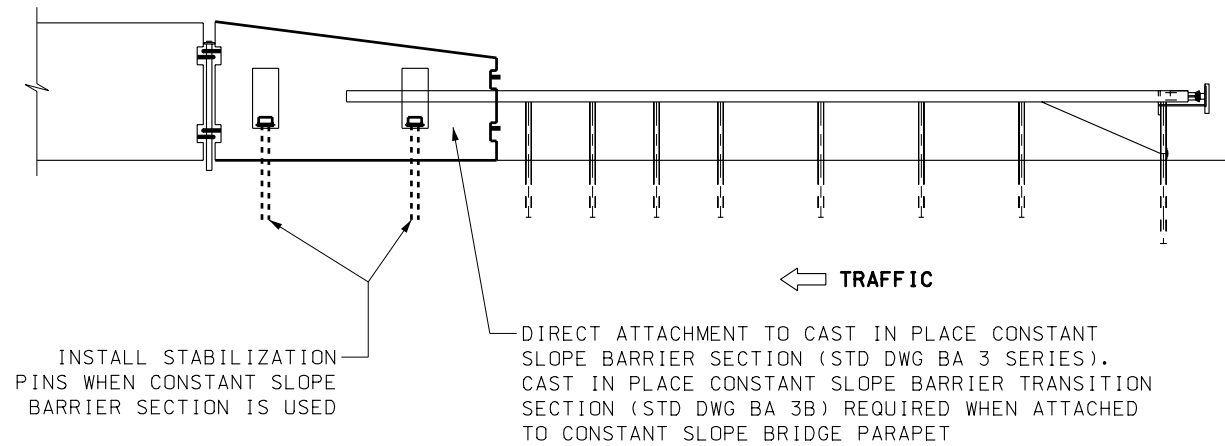
Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

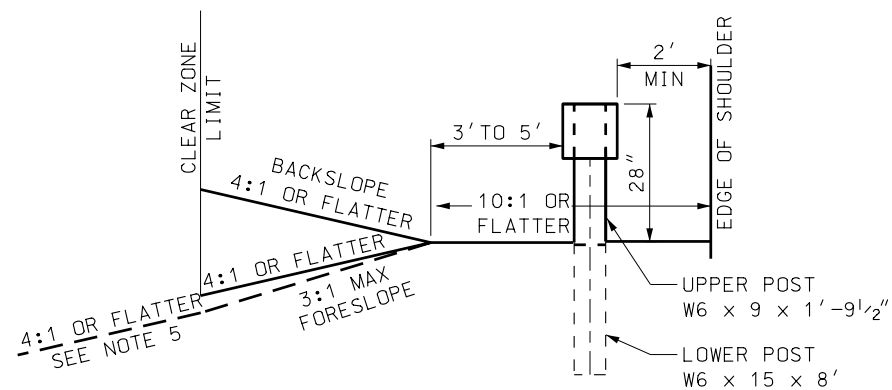
- Priority 1 Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised.
- Priority 2 Upon posting, this impacts projects being advertised.
- Priority 3 Upon posting, the approved standard takes effect two weeks later for projects being advertised.

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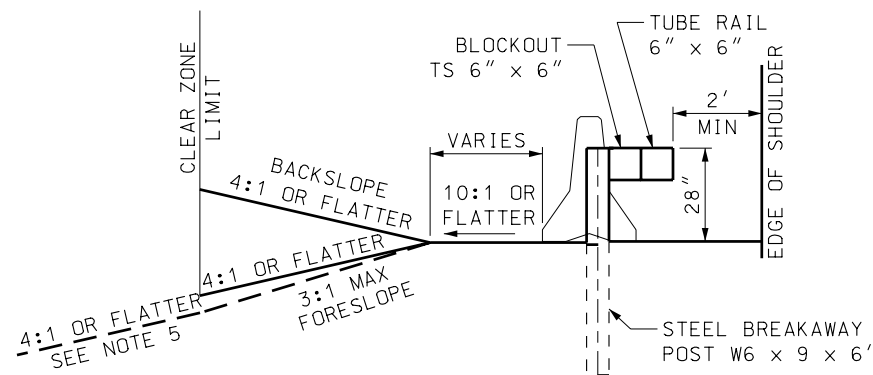
D:\09-AUG-2005\Drawings\Impervial\2005\Working\Standards\Committee\Files\August05\CC07B.dgn



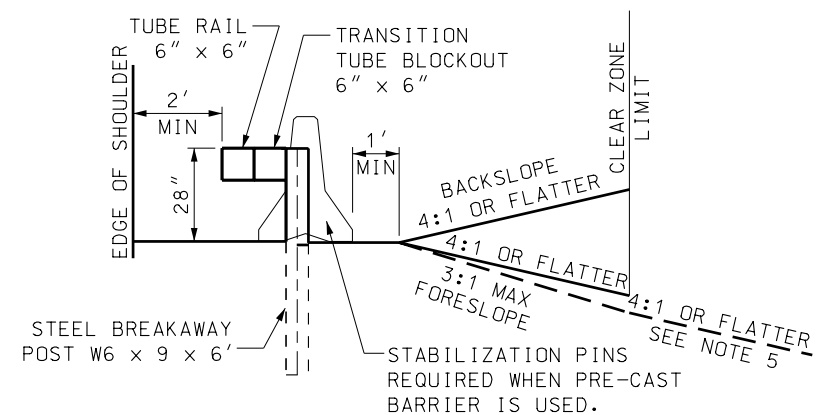
DETAIL WHEN SYSTEM IS INSTALLED WITH CONSTANT SLOPE BARRIER
(GROUND MOUNTED POST SHOWN, SURFACE MOUNTED STEEL BREAKAWAY POST ACCEPTABLE, SEE NOTE 4)



SECTION A-A
POST 1

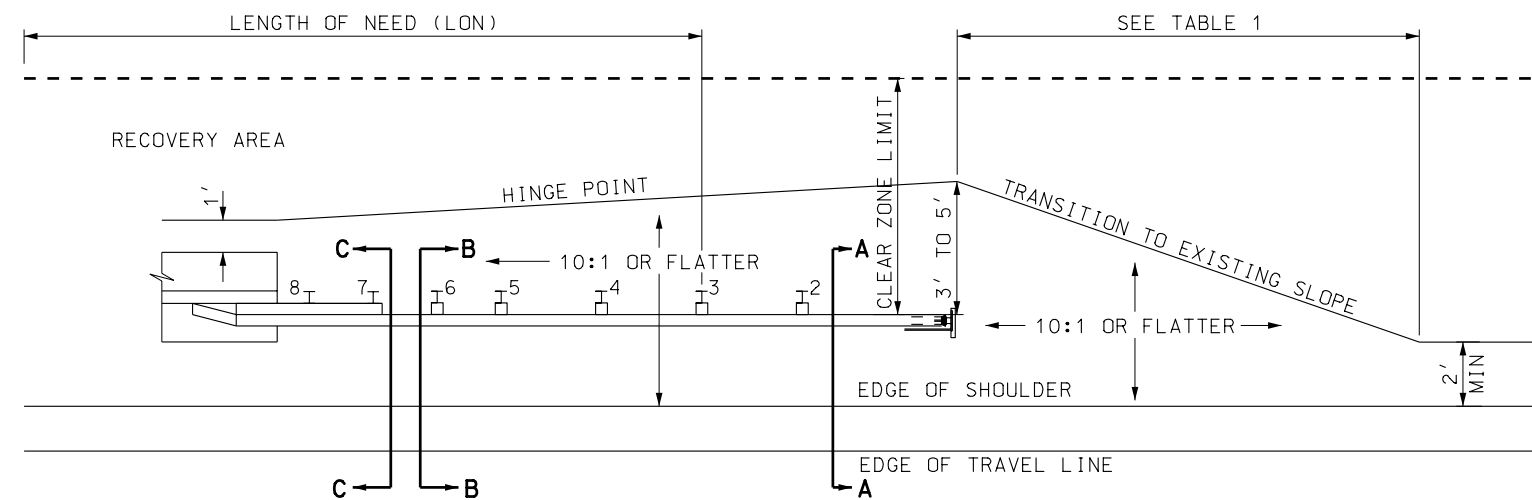


SECTION B-B
POSTS 2 TO POST 6



SECTION C-C
POSTS 7-8

TABLE 1	
SPEED MPH	TAPER
LESS THAN 40	7:1
40 TO 55	10:1
60 TO 75	15:1



NOTES FOR CRASH CUSHION TYPE F

1. THE BEAT-SSCC, MANUFACTURED BY ROAD SYSTEMS INC. SEE UDOT'S GUIDELINES FOR CRASH CUSHIONS FOR SPECIFIC SYSTEM DETAILS.
2. USE SYSTEM WHEN DIRECT ATTACHMENT TO BARRIER IS REQUIRED AND THERE IS LESS THAN 125 FEET OF LONGITUDINAL SPACE IN FRONT OF THE HAZARD. INSTALL SYSTEM AS PER UDOT'S AND MANUFACTURER'S SPECIFICATIONS.
3. HAVE SHOP DRAWING AVAILABLE ON SITE FOR REFERENCE DURING INSTALLATION.
4. THE BEAT-SSCC REQUIRES A GRADED AND COMPACTED SURFACE WHEN GROUND MOUNTED POSTS ARE USED. SURFACE MOUNTED POST OPTIONAL, USE MANUFACTURER'S SPECIFICATIONS FOR CONCRETE PAD, POSTS AND MOUNTING HARDWARE.
5. COMPLETE SLOPE PREPARATION PRIOR TO INSTALLING SYSTEM.
 - A. USE 10:1 OR FLATTERSLOPES IN APPROACH AREA.
 - B. USE 4:1 OR FLATTER FORESLOPE OR BACKSLOPE IN THE RECOVERY AREA.
 - 1) IF A 4:1 FORESLOPE IN RECOVERY AREA IS IMPRACTICAL USE A RECOVERY AREA AT THE TOE OF THE 3:1 FORESLOPE OF 4:1 OR FLATTER.
 - 2) MAXIMUM 4:1 BACKSLOPE TO THE CLEAR ZONE LIMIT IN THE RECOVERY AREA.
6. CLEAR RECOVERY AND APPROACH AREAS OF ANY FIXED OBJECTS.
 - A. DO NOT PLACE SIGNS OR POLES IN APPROACH AREA.
 - B. USE BREAKAWAY SIGNS OR POLES WHEN PLACED IN RECOVERY AREA. MAINTAIN A MINIMUM 10 FOOT CLEARANCE TO SYSTEM.
7. INSTALL REQUIRED MARKING AS PER STD DWG CC 1, TYPE G.
8. REFER TO THE CURRENT EDITION OF THE AASHTO ROADSIDE DESIGN GUIDE TO DETERMINE LENGTH OF NEED (LON) AND CLEAR ZONE REQUIREMENTS.

REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL

CHAIRMAN STANDARDS COMMITTEE
APPROVED

DEPUTY DIRECTOR

STANDARD DRAWING TITLE

CRASH CUSHION
TYPE F
BEAT-SSCC

STD DWG
CC 7B

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Standards Committee Submittal Sheet

Name of preparer: Glenn Schulte

Title/Position of preparer: Safety Specialist

Specification/Drawing/Item Title: BA 1B Precast Concrete Full barrier Section (**Not received**)

BA 3B Precast concrete Constant Slope Transition

BA 4B W-Beam Guardrail Transition (**Not received**)

Specification/Drawing Number: BA 1B, BA 3B & BA 4B

Date Process Started: _____

Date Process Completed: _____

Status: ☒ Approved ☐ Disapproved ☐ Sent Back For Review

Enter appropriate priority level: 3 Outdated submittal sheet used. As a result required information missing and coordination time not two weeks. BA 1B and 4B not received. Not put on agenda.
(See last page for explanation) _____

Sheet not required on editorial or minor changes to standards. Check with Standards Section.

NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page.
(<http://www.udot.utah.gov/index.php/m=c/tid=303>)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

All Drawings:

Welding notes added to the pin details base on field observation that the plate was only being attached with two spot welds. During the driving process these washers are being detached from the pin.

At the request of a manufacturer and contractor a forged head acceptance was added. Boyd Wheeler, Structures Division and Troy Peterson, Materials Division reviewed this change for acceptability. Both concurred the change is acceptable.

- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

NO change.

C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Refer to the Standards Committee Web site, Members page at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.) Contacted Monte Wilson, no concerns.

ACEC Comments: (Use as much space as necessary.) Contacted Tyler Yorgensen, Mr. Yorgensen found a minor error in the length of the connection pin option 1.

Comment period still underway when submittal sheet prepared.

D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

Construction Engineers: No comments

Maintenance Engineers: R2, Betty Purdie, no comments
R4, Hugh Kirkham, no comments

Preconstruction Engineers:

Traffic Engineers: R3, Doug Bassett, no comments

Contractors: contact done through AGC

Suppliers: none contacted

Consultants (as required): contact done through ACEC

Others (as appropriate)

- E. Costs? (Estimates are acceptable.)
1. Additional costs to average bid item price. No cost difference should be incurred.
 2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).
The pin should be easier to remove and remain intact during installation and removal.
 3. Life cycle cost. No effect
- F. Safety Impacts? No effect
- G. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

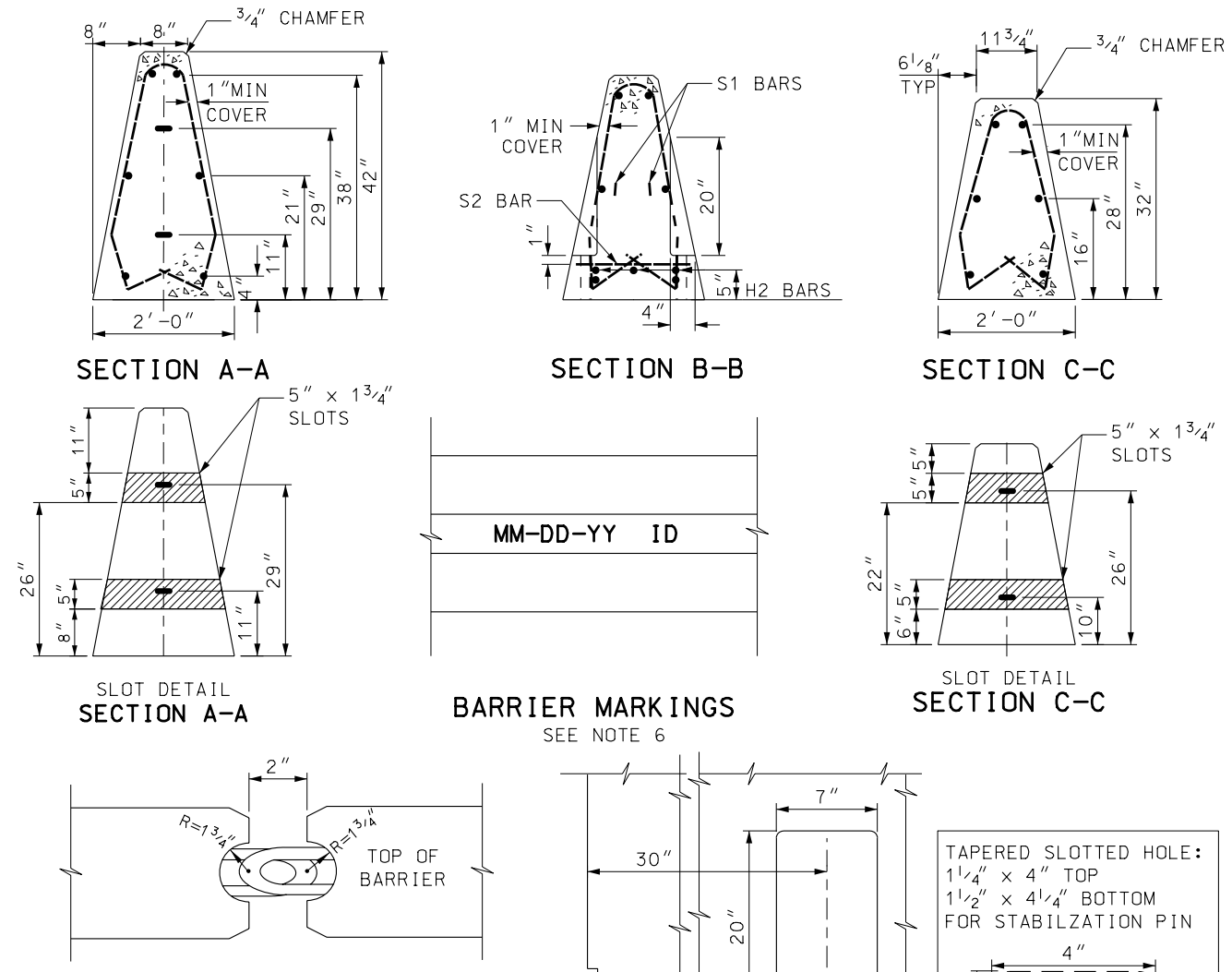
Other Business relating to W-beam Guardrail:

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

- | | |
|------------|---|
| Priority 1 | Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised. |
| Priority 2 | Upon posting, this impacts projects being advertised. |
| Priority 3 | Upon posting, the approved standard takes effect two weeks later for projects being advertised. |

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PIN ACCESS DETAIL

OPTION 1

- R=3/4"
- 3/8" BAR
- 3/16" CONTINUOUS WELD AROUND BAR AND PLATE, AND BOTH SIDES OF 3/8" BAR LOOP
- 2 1/2" x 3/8" PLATES
- 1 1/2"DIA x 28 1/2" LONG BAR

OPTION 2

- 3/16" CONTINUOUS WELD AROUND BAR AND PLATE
- 2 1/2" x 3/8" PLATES
- 3/16" CONTINUOUS WELD AROUND BAR AND PLATE
- 1 1/2"DIA x 30" LONG BAR

GALVANIZED CONNECTION PIN

SEE NOTE 9

LOOP DETAIL

- 3/4" STEEL BAR
- 1 3/4" x 5" GROOVE
- 1 3/4" R
- R=1 3/4"
- R=7/8"
- 1 1/4"
- 5 7/8"
- 2 3/8"

PIN ACCESS DETAIL

- 3/16" CONTINUOUS WELD AROUND BAR AND PLATE
- 2 1/2" x 3/8" PLATES
- 1"DIA x 40" LONG BAR

GALVANIZED STABILIZATION PIN

SEE NOTE 9

GALVANIZED STEEL BAR

- 2'-0"
- 180°
- 1" R
- MIN 10"
- MAX 2"
- 7/8" R
- 90°
- 3/4" BAR

1. TRANSITION SECTION REQUIRED WHEN A CRASH CUSHION OR W-BEAM GUARDRAIL TRANSITION IS REQUIRED ON A CONSTANT SLOPE BRIDGE PARAPET.
2. PROVIDE 4" OF PAVEMENT OR NON-PERMEABLE MATERIAL 1' IN FRONT OF AND 1' ON BOTH SIDES OF TRANSITION SECTION. PLACE TRANSITION SECTION ON TOP OF FINAL PAVEMENT COURSE.
3. ALL APPLICATIONS REQUIRE THE INSTALLATION OF STABILIZATION PINS AND CONNECTION PINS. PRE DRILL 1" HOLE THROUGH PAVEMENT SURFACE PRIOR TO INSTALLING STABILIZATION PINS.
4. USE A 4" WHITE PVC SLEEVE TO FORM THE LIFTING HOLES. LEAVE SLEEVE IN PLACE AFTER CASTING.
5. PLACE AN ADEQUATE AMOUNT OF SILICONE ADHESIVE ON BOTTOM OF WASHER BEFORE INSERTING PIN TO HOLD IN PLACE AND PREVENT EASY HAND REMOVAL.
6. MARK EACH BARRIER WITH 1½" NUMBERS INDICATING THE DATE OF CASTING AND IDENTIFICATION NUMBER SUPPLIED BY THE INSPECTOR, IMPRESSED ¼" DEEP INTO THE TOP CENTER OF THE BARRIER.
7. USE COATED REINFORCEMENT STEEL.
8. USE CLASS AA(AE) CONCRETE.
9. IN LIEU OF WELDED TOP PLATE, A HOT FORGED HEAD IS ACCEPTABLE.

PRECAST CONCRETE CONSTANT SLOPE TRANSITION SECTION FOR CRASH CUSHION AND W-BEAM GUARDRAIL STANDARD DRAWING TITLE	STD DWG BA 3B	UTAH DEPARTMENT OF TRANSPORTATION STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION SALT LAKE COUNTY RECOMMENDED FOR APPROVAL CHAIRMAN STANDARDS COMMITTEE DEPUTY DIRECTOR  AUG.25.2005 DATE AUG.25.2005 DATE	REVISIONS 1 02-24-05 G.S. NEW DRAWING. 2 07-20-05 G.S. ADDED NOTE 9, ADDED WELDING NOTES TO PIN DETAILS, CORRECTED CONNECTION PIN OPTION 1 DIMENSIONS
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Action Item Update for August 25, 2005 Standards Committee Meeting
(As of August 25, 2005)

Item 1, Rumble Strips: According to John Leonard a QIT is formulating a policy. Traffic and Safety to update the drawing. This item was originally opened June 27, 2002. **Expected target date now October 2005.**

Item 2, Painted Cattle Guard: According to John Leonard this is a dead issue. There is no standard or research available in order to continue with this item. This item was originally opened December 19, 2003. **Recommend closing item.**

Item 3, New Drawing of Four-Legged Intersection: According to John Leonard he is currently working on a three-legged intersection. Once that is done he will work on this item. This item was originally opened August 28, 2003. **Recommendation is to leave open. A target date is needed.**

Item 4, Traffic Barriers (Median Barrier Selection Process): This item was to be covered on the August agenda but no file or information was received prior to deadline for publication of agenda. **A target date is needed.**

Item 5, Open Range Cattle Issues: John Leonard didn't have any information prior to deadline for publication of agenda. Target date had been moved to August 2005 meeting at the last meeting. **A new target date is needed.**

Item 6, Section 00555, Prosecution and Progress, Liquidated Damages Table letter to FHWA indicating the information has been reviewed but that no change is being recommended: No information received in response to an e-mail request sent on July 27th and opened on August 4th.

Item 7, Environmental Supplemental Specifications and Standard Drawings: This item is being covered on the August agenda.

Item 8, Supplemental Specification 00725M, Scope of Work: This item was to be covered on the August agenda but no file or information was received prior to deadline for publication of agenda. **A target date is needed.**

Item 9, ATMS Supplemental Specifications: This item is being covered on the August agenda.

Item 10, Deviating from Standards: Still in progress. The Standards Section has discussed various options and the direction to be taken but no further action taken as yet. No target date has been established.

Item 11, Median Cable Barrier: Still in progress. No target date has been established.

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End of Agenda Package